

**Manitoba Hydro 2010/11 & 2011/12 GRA
Book of Documents – KPMG Report - PUB Counsel**

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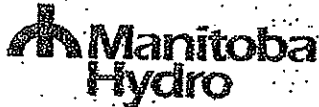
PUB/MH/RISK-88

Reference: Risk Studies Project Management

- a) **Please provide a full copy of the RFP, to undertake the risk study completed by KPMG, indicate the number of proponents which responded to the RFPs, a copy of the selection criteria matrix employed to evaluate the proposals with the relative ranking of each proponent against that criteria. If an RFP was not tendered for these assignments, please explain why, how and by whom the consultant was selected.**

ANSWER:

The decision to engage KPMG was made by the Board of Manitoba Hydro.



R.B. Brennan, FCA
President and
Chief Executive Officer

2009 11 10

Mr. Bob Owen
KPMG
Suite 2000, One Lombard Place
Winnipeg, Manitoba
R3B 0X3

Dear Bob:

RE: REQUEST FOR PROPOSAL - EXTERNAL QUALITY REVIEW

As you are aware, a consultant hired by Manitoba Hydro has initiated [REDACTED] containing a series of allegations primarily targeted at the Corporation's export power sales and associated risk management practices. These allegations are being taken very seriously by Manitoba Hydro management, the Board, and the Audit Committee.

Manitoba Hydro management is confident that we operate in good faith and manage utility operations in the best interests of the Province of Manitoba and our stakeholders. We continually strive to improve our methodology in managing the challenges we face related to power sales and operations and the many and varied risks embedded therein. We have engaged several consultants in recent years to draw upon their credentialed experience with a view to improving our methods of operation and approach to risk management. In fact, it was in our quest to continue to evaluate and improve our integration of quantitative risk management activities related to the power sales function that the Whistleblower was hired to perform certain contracted duties.

In a recent meeting of the Audit Committee (later affirmed at a meeting of the Board), it was decided that Manitoba Hydro would hire a qualified accounting firm to perform an external quality review, as is defined in the attached Terms of Reference. The purpose of this letter is to have you review the Terms of Reference, determine if you are in a position to meet the objectives therein stated, and invite you to submit a proposal to undertake the engagement.

Mr. Bob Owen
2009 11 10
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Manitoba Hydro recognizes that there are allegations made by a disgruntled consultant which may require further expert assistance to allow a fulsome evaluation as to their merit. As indicated in the Terms of Reference, Manitoba Hydro stands ready to work with the selected consultant in obtaining the assistance determined to be necessary and reasonable in the circumstances. In addition, the consultant will be granted access to line management, their staff and the related information sources required to undertake the work necessary to deliver the product outlined in the Terms of Reference. Manitoba Hydro's Internal Audit Department is actively engaged in working toward the completion of the project outlined in their associated Terms of Reference, also attached for reference purposes. Internal Audit will provide the product referenced and will assist the consultant hired to complete the external quality review should their assistance be required. Timing is tight and the resulting work product will undoubtedly be critiqued by The Office of the Auditor General of Manitoba and others with a vested interest in ensuring that the [REDACTED] report is given due consideration.

In advance of providing Manitoba Hydro with a proposal related to the completion of this work, you are invited to meet with myself and/or Internal Audit to gain an appreciation as to the nature and extent of the work associated with this engagement. After you have had the opportunity to consider the Terms of Reference and meet with Manitoba Hydro personnel as you consider necessary, we would appreciate receiving a written response to this request. We would require a written proposal inclusive of:

1. the names and CVs of individuals who would be responsible for material portions of the engagement along with an expression that they have the capability required to do the work;
2. assurance that there are no conflicts associated with KPMG accepting this engagement;
3. the nature of anticipated use of Corporate resources in completing the engagement;
4. the financial terms which you would require as compensation for the work;
5. a timeline for the activities (recognizing the intended completion date of December 31, 2009);
6. progress reporting methodology; and
7. a reporting strategy (format/drafting process) to the Audit Committee of The Manitoba Hydro-Electric Board.

Yours truly,



RBB/gt
Att.

**MANITOBA HYDRO
ENERGY RISK MANAGEMENT PRACTICES**

TERMS OF REFERENCE

Manitoba Hydro has received reports from [REDACTED] and its principal, [REDACTED]. The reports may also be subject of a review by the Auditor General of Manitoba in accordance with the Auditor General Act. The reports contain: (a) findings and recommendations for Manitoba Hydro in areas such as risk management, long-term contracts, hydrologic modeling, specific power trading issues, and governance structures for power trading; (b) allegations involving [REDACTED]'s own financial and contractual claims against Manitoba Hydro; and (c) personal allegations against management.

The Corporation has received comments on the [REDACTED] reports from internal Corporate personnel, and it has received independent advice on the handling of drought risk and long-term contracts from ICF Consulting.

Pursuant to Public Utilities Board (PUB) Order 32/09, Manitoba Hydro has been directed to file, for PUB approval, a conceptual outline for an in-depth and independent study of all the operational and business risks facing the Corporation. The risk study is to be a thorough and quantified analysis, including probabilities of all identified operational and business risks. This risk report should consider the implications of planned capital spending, taking into account export revenue growth, variable interest rates, drought, inflation experience and risk and potential currency fluctuation.

The purpose of the KPMG Review is to evaluate the merits of the findings and recommendations as described in the opening paragraph above and to provide the independent risk analysis as directed by the PUB. The KPMG Review will be shared with the PUB and other oversight bodies.

KPMG will be retained by, and report to, the Audit Committee of The Manitoba Hydro-Electric Board. The specific tasks for KPMG are as follows:

1. Review existing internal and external reports related to matters of Manitoba Hydro's risks, as well as the source data for each of the reports.
2. Provide a conceptual outline to Manitoba Hydro, for the in-depth and independent study as directed in PUB Order 32/09 and meet with PUB Staff and/or Advisors as necessary to review the PUB's Orders and concerns with respect to Manitoba Hydro's risks.

3. Prepare the independent, in-depth Risk Study as directed in PUB Order 32/09, which is to include an evaluation of the findings and recommendations that have been made by [REDACTED] Manitoba Hydro's Corporate comments and the ICF Report dealing with risk management, long-term contracts, hydrologic modeling, specific power trading issues and governance structure for power trading.

With respect to long-term contracts, KPMG should consider:

- a) the implications of planned capital spending taking into account export revenue growth, market access risk, interest and inflation risk, and potential currency fluctuation; and
- b) Hydro commitments and risks related to electrical reliability requirements of dealing in the MISO market.

The Risk Study should also consider energy supply risks, especially those that export commitments might impose on domestic supply.

4. Prepare a report summarizing findings, conclusions and recommendations on or before December 31, 2009.

**MANITOBA HYDRO
ENERGY RISK MANAGEMENT PRACTICES**

**Internal Audit Review
TERMS OF REFERENCE**

1. Prepare a list of all of the allegations made by [REDACTED] through a detailed review, analysis and interpretation of the documentation provided by [REDACTED] to date.
2. Organize the allegations in a manner to facilitate an effective review and response.
3. Prioritize the allegations, based on an assessment of the risk associated with the allegation. The relevant risks could include but are not limited to: financial, reliability, environmental, customer value, operational and reputational.
4. Do the following for each allegation that is deemed to have a high priority as per the above:
 - Explain the potential implication to the corporation, including whether it is a business consideration or issue of perceptions.
 - Identify the positions that have been taken to date by Manitoba Hydro employees, and where applicable by ICF Consulting.
 - Provide this listing to the consultant hired to perform the External Quality Review to assist them in performing their assessment.
 - Provide assistance to the consultant hired to perform the External Quality Review to allow them to make suggestions as to whether the Corporation appears to have a relatively sound basis of understanding of the allegation or whether material gaps exist in the corporation's understanding, and make suggestions as to additional technical expertise that would be advisable to address any such gaps.
5. Summarize your findings in a report or table for the Audit Committee. Treat this project as a high priority engagement with a view to completing the engagement on an ASAP basis.



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CONFIDENTIAL

Mr. William C. Fraser F.C.A.
Chair of the Audit Committee
The Manitoba Hydro-Electric Board
360 Portage Avenue
Winnipeg, MN R3C 0G8

November 20, 2009

Dear Mr. Fraser

KPMG LLP ("KPMG") is pleased to submit this proposal to The Manitoba Hydro-Electric Board ("Manitoba Hydro") to undertake an External Quality Review ("Review"). This Review will be used to help Manitoba Hydro's management, Audit Committee, and Board evaluate the merits of recent allegations made by an external consultant with respect to decisions made at Manitoba Hydro. This letter describes the objective of our engagement, the nature of the services that we will provide, and our professional arrangements.

This engagement letter has been prepared based on The Manitoba Hydro Energy Risk Management Practices Terms of Reference provided to KPMG on November 20, 2009. It is acknowledged by both parties these terms may change as the engagement progresses. Any substantive changes in the terms of the engagement will be mutually agreed to in writing by both parties.

Manitoba Hydro acknowledges that they have authorized KPMG to engage third party consultants to assist in completing certain aspects of this project if KPMG determines this would be required to complete the engagement.

We confirm we are not aware of any conflicts associated with KPMG accepting this engagement. Our US firm has provided certain services to ICF Consulting unrelated to this engagement. As a result and in accordance with our firm policies the KPMG engagement team assisting Manitoba Hydro will exclude any individual that has previously provided professional services to ICF.

Background

Manitoba Hydro has received complaints from an external consultant. These complaints may be the subject of a review by the Auditor General of Manitoba. The complaints relate to mishandling by management in areas such as drought risk management, long-term contracts, hydrologic modeling, specific power trading issues, and governance structures for power trading.

Scope of Work

For this review, you have asked us to undertake the following activities:

- Review a list of allegations that have been made by the consultant.
- Identify the positions of Manitoba Hydro staff and other external expert consultants on each of the allegations.
- Determine whether the information assembled to date provides a reasonable basis for evaluating the merits of these allegations, and provide our evaluation of the allegations.
- Prepare a report summarizing our findings, on or before December 31, 2009.

Where allegations require further expert study and analysis, we will work with the President & CEO and others as necessary to arrange for the additional work product and associated funding.

Approach

We propose to undertake this engagement through a two-phased approach. Our proposed phases are as follows:

1. Phase One: Diagnostic Review and Scoping
2. Phase Two: Detailed Analysis and Reporting

These Phases are discussed in more detail below.

1. Phase One: Diagnostic Review and Scoping

We envisage **Phase One** as a diagnostic phase in which we undertake an initial review of the consultant's allegations and surrounding circumstances. Phase One will begin with an initial series of meetings with key members of management and staff and a review of relevant reports and supporting documentation. The objective of this work will be to quickly get up to speed on the relevant issues and to identify the key questions that will need to be addressed by the Review. In the event that there are a large number of allegations, there may need to be some prioritization of those subject to further investigation and analysis.

It will include:

1. Review existing internal and external reports related to matters of Manitoba Hydro's risks, as well as the source data for each of the reports.
2. Provide a conceptual outline to Manitoba Hydro, for the in-depth and independent study as directed in PUB Order 32/09 and meet with PUB Staff and/or Advisors as necessary, including giving testimony at PUB hearings, to review the PUB's orders and concerns with respect to Manitoba Hydro's risks.

As part of Phase One, we will then prepare a Planning Report that:

- Identifies and defines the issues that will need to be addressed by the Review.
- Provides a proposed methodology for addressing these issues. The methodology will include a framework for evaluating the consultant's allegations and for arriving at conclusions regarding their merit.
- Identifies the sources of data that will be used in our analyses, and specifies any external inputs or studies that will be required to supplement existing data available within Manitoba Hydro.
- Provides a detailed work plan, with staffing plans, timelines, and associated professional fees.

Based on our preliminary analysis and discussions with you, we expect that there may be approximately 10 to 20 issues that will need to be addressed by KPMG during Phase Two in order to assess the consultant's allegations.

2. Phase Two: Detailed Analysis and Reporting

During Phase Two, we will carry out the detailed work plan that is developed during Phase One. This work plan will include the preparation of a formal report. This report will document our analyses and conclusions in a format that is suitable for distribution to key stakeholders, including your shareholder, the regulator, and members of the media, as appropriate. In particular, this report will be suitable for submission as evidence in regulatory and/or legal proceedings. This entails a high degree of rigor with respect to our analyses and their presentation. While details of the Phase Two work plan are yet to be defined in detail, we anticipate the work plan including at a minimum the following:

Prepare the independent, in-depth Risk Study as directed in PUB Order 32/09, which is to include an evaluation of the findings and commendations that have been made by this consultant, Manitoba Hydro's Corporate comments and the ICF Report dealing with risk management, long term contracts, hydrologic modeling, specific power trading issues and governance structure for power trading. In its report, KPMG will be specific in either concurring with or rejecting the findings and recommendations of this consultant and may, as applicable, provide its own findings and recommendations related to the issues raised by this consultant. The specific issues to be addressed in Phase Two will be documented in our Phase One Report. With respect to long term contracts, we will consider:

- a. The implications of planned capital spending taking into account export revenue growth, market access risk, interest and inflation risk, and potential currency fluctuation; and
- b. Hydro commitments and risks related to electrical reliability requirements of dealing in the MISO market

The Risk Study should also consider energy supply risks, especially those that export commitments might impose on domestic supply, as well as the impact on the security of supply of not having or significantly curtailing long term export power sales.

The Nature of Anticipated Use of Corporate Resources

The nature of anticipated uses of corporate resources will vary by phase. In general, we anticipate requiring access to senior management such as SVP, Power Supply and the SVP's direct reports, in

particular the PS&O leadership; CFO and finance leadership; President and CEO's office, etc. We anticipate requiring access to background reports referenced in any allegations made by the consultant and any reports/materials produced by Manitoba Hydro or its advisors to rebut / examine allegations made by the consultant.

We also anticipate requiring access to power trading policies/power trading reports / power production reports / minutes / power point / MS word / Excel records of key decision making committees related to power exports, production forecasting or similar bodies.

To the extent necessary to gain an understanding of the model logic, we may require access to the programming logic / code modules of key planning tools such as HERMES / SPLASH and access to the expert operators of such tools. We also anticipate requiring access to the input data and methodologies used in the analysis generated by HERMES and SPLASH. As the engagement progresses, we may identify other resources that we may need access to.

Moreover, in general our requests for access to staff and/or data/reports/methodologies/policies will be driven by a positive requirement to either adequately understand the allegations made by the consultant, any Manitoba Hydro position's on these allegations and/or to understand and analyze Manitoba Hydro's key decisions and decision making process as it relates to its power production planning and sales process. Further, our requests will also be in furtherance of the requirement for the Risk Study envisioned in PUB Order 32/09.

We will also require access to the reports prepared by Manitoba Hydro's External Legal Counsel, Aikens, MacAulay and Thorvaldson LLP, as well as meetings with representatives of Aikens that we may deem appropriate.

The Engagement Team

The consultant's allegations have generated considerable attention within Manitoba Hydro's stakeholder community. As noted earlier, this matter may be reviewed by the Auditor General. It is essential that our final Phase Two Report be objective, credible and fully backed by supporting evidence and documentation. Our analyses and conclusions are likely to be subject to very detailed scrutiny by a variety of external stakeholders. Accordingly, we have assigned to this engagement a very senior team with experience in the following areas:

- Management reviews and the assessment of decision-making processes, particularly in the development and management of long-term contractual arrangements.
- Analysis of complex issues, including the preparation of expert evidence and the provision of expert testimony in legal and regulatory tribunals.
- Energy issues and utility regulation.

In the section below, we summarize the backgrounds of the specific individuals identified for this engagement.

- **Bob Owen.** Bob Owen is well known to management at Manitoba Hydro, having served for many years as your external audit partner. Bob Owen was also a key member of KPMG's team in our review of the Centra Gas acquisition. Bob is based in Winnipeg and accordingly has a good understanding of local sensitivities regarding this engagement. Bob's principal role will be to

serve as the client service partner responsible for the overall quality of our services and timely delivery of our project reports.

- **Stephen Beatty.** Stephen Beatty is a Partner, and is the head of KPMG's Global Infrastructure Practice in the Americas. Stephen provided advice to Manitoba Hydro with respect to its agreement with the Nisichawayasihk Cree Nation for the development of the Wuskwatim Project. Steve has advised public sector clients extensively on issue related to PPP policy development, project financing, project scoping, and process design. Stephen, as are the remaining members of the team, is based out of KPMG's Toronto office. Stephen will be responsible for the management and direction of this project.
- **Will Lipson.** Will Lipson is a Managing Director who specializes in helping public agencies plan and deliver large infrastructure projects. Will has expertise in project management, program evaluation, corporate planning and operations, public-private partnerships, financial and economic analysis, and demand forecasting. He is well known by government agencies across North America, and has been qualified as an expert witness on a number of occasions during the course of his career.
- **Anurag Gupta.** Anurag is a Director. Anurag has over 10 years combined experience in project and corporate finance with extensive experience in structuring projects and complex transactions in the energy and infrastructure sectors. Prior to joining KPMG, Anurag had senior positions with Infrastructure Ontario, Ontario Power Generation, and TXU Energy in Dallas, where his work involved energy trading, structured transactions and finance, quantitative and financial analysis, and credit risk assessments.
- **Michael Ross.** Michael is a Senior Associate at KPMG. Together with Bob Own, Michael led our work for Manitoba Hydro to review the synergy savings from the acquisition of Centra Gas. Michael was for many years the Partner in Charge of KPMG's Economics Group and has extensive experience in the use of economic methods and evaluation techniques. He has directed or carried out studies involving program evaluation, economic impact, and cost-benefit analyses.
- **Jonathan Erling.** Jonathan is a Managing Director. Jonathan was involved in our review of the Centra Gas acquisition and acted as an expert witness on this issue at the Manitoba Public Utility Board. Jonathan's practice focuses almost exclusively on issues related to energy economics and utility regulation. He provides financial modelling, cost allocation and strategic planning services for utility and power generation clients. He has recently undertaken a number of assignments for the Ontario Energy Board (OEB), in addition to acting as an expert witness at OEB hearings.
- **Frank Chen.** Frank is a Senior Manager in our Calgary office. He brings experience in energy trading, risk systems and documentation.

Resumes of the above individuals have been included as an appendix to this letter.

This core team of senior professionals will lead and carry out our work on Phase One. This core team of senior professionals identified above will be supported by other resources as appropriate.

Business Arrangements

We will bill for our services at the following hourly rates:

| | |
|-----------------|----------------|
| Bob Owen | \$315 per hour |
| Stephen Beatty | \$490 per hour |
| Will Lipson | \$490 per hour |
| Anurag Gupta | \$315 per hour |
| Michael Ross | \$450 per hour |
| Jonathan Erling | \$375 per hour |
| Frank Chen | \$315 per hour |

Assuming full start-up the week of November 23rd, we propose to provide our Phase I report by Friday, December 4th.

GST and out-of-pocket expenses will be billed in addition to the amounts noted above. We expect that the majority of our out-of-pocket expenses will relate to travel and accommodation.

Neither the amount of our fees nor the payment of our fees and expenses will depend upon the results of our work. This engagement will be subject to the standard terms and conditions attached to this letter.

Upon completion of Phase One we will be in a position to confirm, based on the number and complexity of the issues identified that will need to be addressed, the timing of delivery of our Phase Two Report, remaining fully cognizant of the December 31st target.

We would be pleased to discuss changes to our proposed scope of work or business arrangements if the foregoing letter does not match your exact requirements. In the event that the letter does address your requirements, please confirm your agreement with the foregoing by signing and dating a copy of this letter and returning it to us.

Yours very truly,



R.J. Owen, C.A.
Partner



We acknowledge that we have read the foregoing agreement and agree to be bound by it.

Chair of the Audit Committee
The Manitoba Hydro-Electric Board

Date

Bob Owen, Client Service Partner

Role: Bob Owen will serve Manitoba Hydro as client service partner. He will work with the project team to ensure that all of our commitments are delivered on a timely basis and to your satisfaction. Bob has over 30 years of public accounting experience with KPMG, and has 20 years of experience as a member of the Manitoba Hydro audit engagement team. In addition to serving his clients, Bob is also the Professional Practice Partner-in-Charge for the Winnipeg office. Bob will attend all meetings with Manitoba Hydro's Audit Committee, Board of Directors and senior management and oversee the delivery of all our services.

Some of Bob's most significant clients include or have included: Investors Group, Agriculture and Agri-Food Canada, Cargill Limited, Jovian Capital Corporation, Pollard Banknote Income Fund, Ladco Company Limited, Bird Construction, Ceridian Canada Ltd., Old Dutch foods Ltd., Ducks Unlimited Canada, Lake Louise Limited Partnership and Canad Inns.

Education and Affiliations:

- Bachelor of Arts degree, University of Manitoba
- Bachelor of Commerce (Honours) degree, University of Manitoba
- Chartered Accountant, Institute of Chartered Accountants of Manitoba

Stephen Beatty, Project Manager

Role: Mr. Stephen Beatty is a Managing Director of the Public/Private Practice of KPMG LLP in Toronto. Steve is also Head of KPMG's Global Infrastructure and Projects Group for the Americas. He co-chairs KPMG Canada's Privatization/Private Finance Network and is the Canadian Representative of KPMG's Global Privatization, Public/Private Network.

He has a B.B.A. from Wilfrid Laurier University, an M.B.A. with honours from York University, and over twenty years' experience with KPMG. He is a member of the Planning Forum, the American Marketing Association, and an associate member of the Transportation Research Board (U.S. National Academy of Sciences). He co-chairs the KPMG National Public Private Network.

Consulting Experience

Transportation

- **Texas Highways Program**—KPMG has been engaged as a Financial Advisor to TxDOT on procurement strategies and implementation plans for its statewide comprehensive development agreement (design-build, PPPs and franchises/concession) program, which TxDOT anticipates utilizing to help finance many of its new turnpike projects over the next several years. Mr. Beatty's responsibilities have included assistance in developing and implementing transaction strategies, assisting with evaluation of qualifications submittals and responses, coordinating with engineering consultants and internal staff, negotiating with proposers, analyzing financing options, assisting with federal SEP-15 approvals, advising on commercial terms, providing CDA training seminars, and a host of other activities.

In addition, KPMG is assessing financing requirements on a project-by-project basis, analyzing project revenues, investigating other potential revenue sources, and creating strategies for financing each of the individual CDA projects. KPMG is also assisting TxDOT with its applications for TIFIA and PABs for several of the CDA projects. KPMG's involvement spans the entire CDA program.

Mr. Beatty is providing overall client quality assurance and strategic advice on the TxDOT program. This work has included developing programmatic views on dealing with specific issues on the various projects, as well as addressing specific project-level issues. These issues range from business planning, procurement options, providing financial and structuring advice, payment mechanisms and key inputs into the development of financial models. The various projects in which Steve is involved include:

- Assisting TxDOT in working with Cintra-Zachry in the development of a Master Financial Plan for the TTC-35, crossing the State and connecting the Oklahoma border with Mexico.
- Advising in the direct negotiations with Cintra-Zachry for Segments 5 & 6 of SH 130, near Austin.
- Dallas-based projects including the SH 121, IH 635, SH 161, North Tarrant Express, and the soon-to-be released DFW Connector.
- The Loop 1604/SR 281 project in San Antonio.
- The recently released TTC-69 project, connecting Louisiana with Mexico.

- Assessing the PPP potential of several other unfunded projects and creating a framework for "triaging" unsolicited proposals.
- **Ontario Privatization Secretariat—Advisor for the Highway 407 Divestiture.** Mr. Beatty was a principal advisor to the Ontario Privatization Secretariat in the successful \$3.1 billion divestiture of Highway 407, the world's first electronically tolled highway. This transaction is the largest transaction affected by the Province of Ontario to date and was completed in less than nine months. KPMG's extensive involvement included roles as the overall business advisor, transaction process advisor, the transportation advisor, and the accounting advisor.
 - Mr. Beatty, as the transaction process advisor, assisted the Province in the design and execution of the process and provided project management support to ensure that the divestiture process followed was fair, transparent, and defensible. KPMG also served as the interim manager of the facility.
 - In the role of transportation advisor, KPMG provided advice on traffic forecasting, economic regulation, and other matters. One of the key elements of KPMG's work was the design of the toll rate regulation regime to be used by the winning bidder.
 - As an accounting advisor, Mr. Beatty assisted in analyzing various transaction structures, performed due diligence on financial and operating information, and advised on various components of the financial model.
 - Mr. Beatty also worked to assist the Province in the transfer of ownership from the Province to the private sector. These responsibilities included assisting the Province in ensuring all obligations under various agreements with the private sector had been met, assisting the Province in identifying government sensitive documents, and identifying and quantifying outstanding liabilities. Specifically, KPMG assisted with the development of protocols to deal with various contractual, safety, and other issues over concession term, advising the Province on its business relationships with the purchaser through participation in regular management meetings, and devising an approach to perform an audit of compliance with the agreements.
- **Ontario Ministry of Transportation—Highway 407 Regulatory Advice.** Mr. Beatty is a member of the KPMG team that is providing ongoing assistance to the Ontario Ministry of Transportation in its administration of the 99-year concession for Highway 407. The primary focus of the work involves assistance with the regulatory framework which was developed as part of the privatization of the Highway.
- **Indiana Department of Transportation I-69 Corridor.** KPMG was mandated by INDOT to perform a financial feasibility study on the I-69 as a requirement of Indiana's legislation that determined a financial feasibility study must be performed by a firm internationally recognized in the field of such studies. KPMG, along with a team of technical and legal advisors, were mandated to perform the study. Steve has the overall responsibility and is a key strategic advisor to the Indiana Department of Transportation regarding the development of the I-69 corridor in the State under a concession model. I-69 has been identified as a major initiative of the federal highways

administration that is currently being pursued by six States. Steve is advising the only two States (Texas and Indiana) that are at the forefront of delivering their segments of the I-69 and will soon be taking the transactions to market.

- **Irish National Roads Authority—Public-Private Partnership Assistance.** Mr. Beatty was a member of a large KPMG team that provided assistance to the Irish National Roads Authority in the structuring and tendering of ten design-build-finance-operate road projects in Ireland. Mr. Beatty's primary focus was on the tolling of the facilities and different methods of achieving financial self-sufficiency in a number of projects.
- **Riverside County Transportation Commission - Development of PPP Highways.** KPMG was recently appointed as Financial Advisors to Riverside County Transportation Commission regarding the potential development of several billion dollars of highway improvements in the County. The current work is focused on financial analysis of the various projects, with assessment as to their suitability for development under a PPP approach. Mr. Beatty is involved in this project and has been assisting the client in addressing a range of strategic and policy matters to date.
- **Minnesota Department of Transportation—MN Pass.** Mr. Beatty was responsible for KPMG's assistance to the Minnesota Department of Transportation in assessing the potential for the implementation of the MN Pass System involving a public-private partnership to implement HOV/HOT lanes in Minneapolis.
- **Greater Vancouver Transportation Authority/Translink—Golden Ears Bridge.** Mr. Beatty was a member of KPMG's team providing assistance to Translink in its public private partnership for the design, construction, financing and operation of the Golden Ears Bridge.
- **Greater Vancouver Transportation Authority/Translink—RAV Project.** Mr. Beatty was a member of KPMG's team that provided expert peer review services to Translink in its implementation of the Richmond Airport Vancouver Rail Link.
- **Metro Toronto Roads—Operations Centre Privatization.** Mr. Beatty provided assistance in the negotiations surrounding the potential privatization of the Metro Toronto Traffic Operations Centre.
- **Canadian Highways Constructor—Review of Toll Road Opportunity in Guilin, China.** Mr. Beatty undertook a preliminary feasibility review and negotiations regarding a toll road project in Guilin, China. The work examined the potential to develop a highway under a Build-Operate-Transfer approach.

- **Ministry of Transportation of Ontario—Independent Process Review of Five Design/Build Competitions.** Mr. Beatty was involved in assisting the Ministry in the selection process for design/build highway projects in the following five regions:

- North-western
- Northern
- South-western
- Eastern
- Central

The focus of the engagement was on ensuring that the selection process was fair and credible. Upon completion of the selection process, KPMG reported on the integrity of the process.

- **Confederation Bridge—Toll Revenue Forecasts.** Mr. Beatty was responsible for a series of analyses that led to the development of comprehensive traffic and revenue estimates for the owners of Confederation Bridge which links the Canadian Provinces of New Brunswick and Prince Edward Island. The traffic forecasts were used in conjunction with raising of non-recourse debt for the project.
- **Ontario Ministry of Transportation—Logo Signs.** Mr. Beatty led the KPMG team that provided assistance to the Ontario Ministry of Transportation in the establishment of a public-private partnership for the procurement of logo signs on Ontario's major highways. The work involved the establishment of a concession framework as well as the offering of the business opportunity to the private sector.
- **Governments of North Dakota, Manitoba and Saskatchewan—Border Crossing.** Mr. Beatty was a member of a KPMG team that provided assistance to the Governments of North Dakota, Manitoba and Saskatchewan regarding two major rail border crossings between Canada and the United States. The work examined the potential to accelerate customs clearance at the border and recover the costs from users.
- **BC Ministry of Transportation—Sea to Sky Highway.** Working for the British Columbia Ministry of Transportation (MoT), KPMG analyzed the potential to successfully implement, using a public-private partnership, a long-term business arrangement for the operation, maintenance, and upgrading of Sea to Sky Highway. This project included various aspects, such as issues analysis, business case development and options analysis, project planning, analyzing and determining the optimal business model and deal structure, communicating and marketing the deal, creating an interim operating entity, developing a concession agreement, evaluating bids, completing the final transaction, and operational transitioning. Mr. Beatty was the lead advisor on the \$1 billion-plus project, and was key in developing a full understanding of all the relevant issues, in order to determine if there was a business case that could support a P3 structure.

- **BC Ministry of Transportation—Coquihalla Highway.** For the BC Ministry of Transportation, KPMG was retained as the business advisor in the privatization of the Coquihalla Highway. The Coquihalla Highway is the only toll highway in B.C. KPMG's role included assisting in the structuring of the transaction, addressing key transaction parameters, developing the tolling regime, developing the business case, and assisting with the transaction process. Mr. Beatty was the client service partner on this assignment, advising on key transaction parameters and ensuring that the objectives of the transaction were consistent with other road privatization transactions within the Province.

- **Municipality of Metro Toronto—Acquisition of a Parking Tag Management System.** Mr. Beatty assisted staff of Metro Toronto in the acquisition of a new parking tag management system, assisted in drafting the Request for Expressions of Interest, the shortlisting of the proponents, the drafting of the Request for Proposals and the evaluation of the final proposals. The process involved consideration of both an in-house procurement of the system as well as a privatization of the parking tag office. In parallel, the process also solicited proposals for upgrades to a police management system. Mr. Beatty assisted Metro in the negotiations with the selected proponents.

- **BC Ministry of Transportation—Gateway Program.** KPMG is currently acting as the Business Advisor to the Gateway Program. Mr. Beatty is the Senior Advisor for this engagement, providing strategic and procurement advice, including due diligence, risk assessments, tolling policies and evaluation criteria development. The Province of British Columbia, together with the Greater Vancouver Transportation Authority have undertaken a program of infrastructure improvements, whose objectives are to improve access along and across the Fraser River corridor, improve access to major gateways, promote industrial development, and address current congestion issues. The program is comprised of three primary corridors:
 - Twinning of the Port Mann Bridge and improvements to Highway 1, including widening of the motorway
 - South Fraser Perimeter Road - A proposed transportation corridor running along the south side of the Fraser River (from Highway 91 to Highways 1 and 15). This project would provide the linking of docks, rail facilities, and industrial areas with the Provincial highway system.
 - North Fraser Perimeter Road - improvements and additional connections within the existing road network, combined with improvements to the Pitt River Bridge and Lougheed Highway

Currently, the program is at the pre-Request for Qualifications (RFQ) stage on the Highway 1/Port Mann Bridge project.

- **British Columbia Transportation Financing Authority—Sierra-Yo-Yo-Desan Road Project.** Mr. Beatty assisted the B.C. Transportation Financing Authority in securing a developer/financier of this major natural resource access roadway in Central British Columbia.

- **Province of British Columbia—Lion's Gate Bridge.** Mr. Beatty served as one of the principal advisors to the Province of British Columbia in implementing the repair/rehabilitation/replacement of the Lion's Gate Crossing. Mr. Beatty's work involves assistance in obtaining government acceptance and approval of the project, as well as structuring the transaction to maximize the net benefits.
- **Province of New Brunswick—Procurement Process Review Advisor.** Mr. Beatty served as one of the principal advisors to the Province of New Brunswick regarding the construction of a highway between Fredericton and Moncton. The project, with a value in excess of \$650 million, was undertaken as a public-private partnership between the Government of the Province and a private partner. Mr. Beatty's role involved the provision of expert advice to senior officials in the Ministry of Transportation, the Ministry of Finance and the Ministry of the Attorney General.
- **B.C. Ministry of Transportation and Highways.** Mr. Beatty advised the B.C. Ministry of Transportation and Highways in the development of two design/build highway projects in Vancouver. The projects involved complex design/build challenges on both traffic management and environmental fronts. The KPMG assistance involved the development of a comprehensive approach to project definition, to contractor selection, and negotiations.
- **The City of Mississauga Bus Shelter—Public-Private Partnership.** Mr. Beatty was a member of a KPMG team that provided a range of assistance regarding a public-private partnership for the provision of transit shelters for the City of Mississauga.

Airports and Aviation

- **Joint U.S.-Dutch Developer—Redevelopment of Terminal Building at JFK International Airport.** Mr. Beatty assisted in a joint venture between a U.S. developer and a Dutch airport operations company in the redevelopment of the International Arrivals Building at JFK International Airport. The focus of his work was on conducting due diligence on the financial information that was provided to the proponents in this competition by the Port Authority of New York & New Jersey.
- **Air Terminals Development Group—Terminal One/Two Redevelopment Proposal.** Mr. Beatty provided extensive assistance to the Air Terminals Development Group in the submission of their proposal to redevelop Terminals One and Two at Lester B. Pearson International Airport. The Air Terminals Development Group is owned principally by the Charles R. Bronfman Family Trusts and the Lockheed Corporation. Mr. Beatty was responsible for the development of a comprehensive plan to transfer the assets, employees, and business obligations of Transport Canada to the Air Terminals Development Group. He had a significant involvement in the development of the business plan for the project, and directed the production of the management and operations elements of the proposals.

- **Ogden Aviation—Proposal to Modernize and Expand International Terminal Facilities at the Luis Munoz Marin International Airport in San Juan, Puerto Rico.** KPMG assisted this client in the preparation of a submission in response to the Puerto Rico Ports Authority's Request for Proposal for the development of the above-noted facilities. Mr. Beatty assessed the operational characteristics and financial performance of the airport. Mr. Beatty was also responsible for the development of financial projections and business plan for the project. A key element of KPMG's work was the formulation of the most appropriate form of public-private partnership. Issues considered included rate setting mechanism, cost minimization, and management and control.
- **Private Sector Consortium—New Runway at El Dorado Airport in Bogota.** For a joint US-Spanish consortium, Mr. Beatty assisted in the development of a proposal to build a new runway at the airport in Bogota, Colombia and operate the airport's airside for 20 years. KPMG was responsible for the business plan and the management operations plan and, as part of this work, developed a detailed operating budgets for the project using experiences gained elsewhere and a limited amount of information made available to the bidders. Recently, the Colombian authorities announced that our client's submission was successful.
- **Airport Development Corporation—Operations Assistance.** Mr. Beatty provided assistance to the senior management and ownership of Terminal Three in Toronto in monitoring and analyzing cost and revenue data. Another aspect of the work involved assessing the accuracy of and curing deficiencies in data supplied by tenant airlines. These data are fundamental inputs used in a complex cost-sharing lease agreement between ADC and its airline tenants.
- **Canadian Developer—Privatization of Trinidad Airport.** Mr. Beatty participated in the development of a comprehensive proposal to privately develop new passenger terminal facilities at the Airport. The analysis focused on both the financial offer and the physical requirements of the facility.
- **Canadian Developer—Vietnam Airports.** Mr. Beatty participated in the analysis of the privatization potential of two Vietnamese airports on behalf of a Canadian developer. The work involved an analysis of local and international travel and the physical requirements of the proposed development.
- **Canadian Developer—Privatization of Runways.** Mr. Beatty participated in this engagement involving assistance provided to a Canadian developer proposing to privately develop runway facilities at Lester B. Pearson International Airport. The focus of the work was on the development of a comprehensive financial model and regulatory structure to govern the business relationship between the Government and the developer.
- **U.S. Aviation Company—Proposal to Privatize and Redevelop the Terminal Operations at Trinidad and Tobago's Piarco and Crown Point Airports.** KPMG was retained by a U.S.-based aviation company to undertake the financial analysis and modeling required to determine the feasibility and financial structure of this U.S. \$70 Million project. Mr. Beatty was the leader

of the due diligence and negotiating team. The project encompasses the construction of a new terminal and the transfer of operations of existing facilities at the airports of Trinidad and Tobago. Mr. Beatty reviewed traffic patterns at the airports and prepared a comparison of airport fees and charges at neighbouring international airports.

- **Italian-Thai Development Public Co.—Proposal to Build and Operate the Clark International Airport in the Philippines.** Mr. Beatty was a member of the consulting team that assisted this client in the preparation of a major submission to the government for the redevelopment of the former Clark Air Force Base in Manila, Philippines. The work included the development of traffic forecasts, translation of the traffic forecasts into facility requirements, projection of revenues and operating expenses, development of a financing strategy, and the preparation of the business plan. In addition, KPMG participated in the preparation of an economic benefit and cost analysis for the project.
- **Panama Airport Proposal.** Mr. Beatty led a large KPMG team that provided assistance to Fraport in the analysis of the preparation of an offer to acquire the Panama City Airport.
- **Basque Government—Airport Privatization.** On behalf of the Basque Government, Mr. Beatty examined the financial and economic feasibility of the privatization of the three major airports in the Basque Region of Spain. The work involved an examination of the financial and operational performance of each of the airports as well as a broad assessment of their future potential.
- **Government of Poland—Airport Privatization/Financing.** Mr. Beatty led a KPMG team which examined the potential for the Warsaw Airport to undertake the development of a new passenger terminal either on a project finance or privatized basis. The work involved an examination of a financial and operational details of the existing airport, together with an examination of capital market conditions in Poland and for Polish projects in Europe.
- **Baltic Republic—Privatization Analysis.** On behalf of an Austrian company, Mr. Beatty examined the potential for privatization of a number of facilities in this Baltic Republic. The analysis focused on public infrastructure and housing, and resulted in the identification of several opportunities for future development.
- **Russian Republic—Privatization Analysis.** Mr. Beatty examined the potential to privatize a semi-autonomous Republic's primary airport and other related infrastructure. The conclusion of the work was that substantial other infrastructure investment was required before the airport could be redeveloped using private finance.

- **Ontario Ministry of Health and Long Term Care—CT Scan/MRI Public Private Partnership.** Mr. Beatty was responsible for KPMG's assistance to the Ontario Ministry of Health and Long Term Care involving the operation of a large number of medical diagnostic imaging facilities, financed and operated on a public-private partnership basis.
- **Sunnybrook and Women's College Hospital.** Mr. Beatty led KPMG's team assessing the potential to develop a major research facility at Sunnybrook Hospital in Toronto utilizing a public-private partnership approach.
- **University Health Network—Sports Medicine.** Mr. Beatty directed KPMG's work in examining the potential to implement a major sports medicine facility at Toronto's University Health Network involving a public-private partnership approach.
- **Urban Shared Services Corporation—Hospital Food Preparation Facilities.** Mr. Beatty was a member of the KPMG team that assisted Winnipeg's Urban Shared Services Corporation in the selection of a preferred private sector partner to implement a comprehensive food services management system for a number of Winnipeg health care facilities.
- **Ontario SuperBuild Corporation—Ontario Hospital Association Health Care Public-Private Partnership Workshop.** Mr. Beatty conducted a workshop on behalf of the Ontario SuperBuild Corporation for the Ontario Hospital Association in the field of health care public-private partnerships. The workshop canvassed a range of experiences relating to public-private partnerships from both the public sector perspective as well as the private-sector perspective.

Water/Wastewater

- **Regional Municipality of Halton—Development of Corporate Policy/Proposal Call for New Water and Wastewater Facilities.** KPMG, in conjunction with Borden and Elliot, conducted an assignment for the Regional Municipality of Halton which had two components:
 - the development of a corporate policy on public/private partnerships,
 - the conduct of a proposal call process to develop new required water and wastewater treatment facilities.

Mr. Beatty was the co-partner in charge of this major assignment and thereby became familiar with the latest issues that needed to be addressed in operating and maintaining a water system.

- **Private Sector Developer—York Region Water Public/Private Partnership.** Mr. Beatty served as the principal financial advisor to a consortium who submitted a proposal to York Region to become its partner in the provision of water to the Region. This consortium is lead by Union Gas, The Ogden Corporation, and Yorkshire Water PLC. Focus of the work was the preparation of a proposal and the structuring of the partnership relationship in a manner that provides high-quality services at reasonable prices while earning fair returns for the participants.

- **The Regional Municipality of Hamilton-Wentworth—Public/Private Partnership Negotiations.** Philip Environmental, an environmental services company based in Hamilton, made an unsolicited proposal to the Regional Municipality of Hamilton-Wentworth to manage and operate the Region's water and wastewater treatment facilities. In return, Philip proposed to guarantee a minimum annual savings in operating costs for the Region. Philip also made certain assertions regarding the economic development benefits that the Region could gain from providing the private operator with a base of operations from which to pursue work outside of the Region. KPMG was retained by the Region, where Mr. Beatty assisted staff in negotiating a contract with Philip. The scope of the contract covered the operating standards to be followed by Philip, maintenance procedures and standards, transfer of employees from the Region to Philip, economic development guarantees and the financial arrangements between the two parties.
- **Greater Vancouver Regional District—Water and Wastewater Privatization.** KPMG, together with RPA Consultants, conducted a detailed examination of the potential for public/private partnerships in the water and waste water treatment field for the Greater Vancouver Regional District. Mr. Beatty's work examined likely candidates for public/private partnerships and assessed their potential for success. Three projects were reviewed in detailed and it has been recommended two projects proceed for implementation on a public/private basis
- **Major Water/Wastewater Treatment Provider.** Mr. Beatty provided assistance to a major water/wastewater treatment company in the preparation and submission of a bid for a major public-private partnership contract. The work involved a detailed assessment of the risks of the contract from both the public and private sector perspectives. KPMG's work formed an input into the ultimate pricing decision.

PPP Advisory and Policy

- **Government of the Northwest Territories—Public-Private Partnership Evaluation.** Mr. Beatty was a member of the KPMG team that conducted a comprehensive evaluation of the Government of the Northwest Territories Public-Private Partnership Pilot Program. The work examined both the financial and public policy effectiveness of the program, as well as a range of implementation details.
- **Ontario SuperBuild Corporation—Infrastructure Workshop.** Mr. Beatty conducted a workshop on behalf of the Ontario SuperBuild Corporation in the field of public-private partnerships. The workshop canvassed a range of experiences relating to public-private partnerships from both the public sector perspective as well as the private-sector perspective.
- **Transport Canada/Provincial Transport Ministries—Public-Private Partnership "How-To Guide".** Mr. Beatty was a key member of a KPMG/Goodman's team that prepared a comprehensive "How-To Guide" for public-private partnerships in transportation projects. The work was undertaken on behalf of Transport Canada and the ten Ministries of Transport across Canada.

- **Government of Saskatchewan—Public-Private Partnership Assistance.** Mr. Beatty was a member of a KPMG team that provided assistance to the Crown Investments Corporation of Saskatchewan regarding potential public-private partnerships in the Province.
- **Arab Republic—Public-Private Joint Venture Planning.** Mr. Beatty assisted professionals from Marshall Macklin Monaghan Limited in the development of a methodology to find a joint venture partner for the government in the development of a major new urban industrial complex in this Arab Republic. This brief assignment focused on alternative methods for attracting "partners" and alternative development strategies.

Other Infrastructure Privatization

- **Metro Toronto Laundry Facilities.** Mr. Beatty was a member of a KPMG team that examined the ongoing advisability of a public-private partnership between a private contractor and the Municipality of Metropolitan Toronto in respect of the provision of laundry facilities for the Metro Homes for the Aged.
- **City of Mississauga—Spectator Arena Development.** Mr. Beatty provided assistance to the City of Mississauga in its search for a private developer to build, operate and finance a major spectator arena complex in the City of Mississauga. The work involved the conduct of a proposal call process as well as significant detailed negotiations. The project, using private financing, was ultimately discontinued because an appropriate risk-sharing mechanism could not be achieved.
- **District of Muskoka—Seniors' Housing.** Mr. Beatty had overall partnership responsibility for KPMG's assistance in the privatization of the operation of The Pines Long-Term Care Facility in Bracebridge. The work involved an analysis of existing operations, the conduct of a proposal call process and ultimately, negotiations with a preferred proponent.
- **The City of Surrey—Fleetwood Recreation Complex.** Mr. Beatty provided assistance to the City of Surrey in its search for a private developer to design, build, finance and operate the Fleetwood Sports and Recreation Complex. The work involved conduct of a proposal call process and negotiations with a preferred proponent.
- **Metro Separate School Board—St. Basil's School.** Mr. Beatty led KPMG's assistance to the School Board in finding new ways that the Board's investment dollars could be better leveraged into providing more and better facilities; lower overall cost to the Board; and better service and amenities for the local community.
- **Ontario Ministry of Correctional Services—Correctional Facilities Public-Private Partnership.** Mr. Beatty was responsible for KPMG's assistance to the Ministry of Correctional Services in attempting to implement a new correctional facility utilizing a public-private partnership approach.

- **Canadian Department of Foreign Affairs and International Trade—Berlin Embassy.** Mr. Beatty was responsible for KPMG's assistance to DFAIT in undertaking a public-private partnership for the construction of a new Canadian Embassy in Berlin. The project involved a combination of government facilities as well as commercial development. Complex inter-creditor and inter-tenant arrangements were put in place in order to effectively secure the new Embassy tenancy.

- **World Bank—Natural Gas System Privatization.** Mr. Beatty had overall partnership responsibility for KPMG's assistance provided in joint venture with Consumers Gas Company developing a strategy for the privatization of the natural gas distribution utility in Bursa, Turkey. The work involved an examination of the regulatory issues, physical planning, as well as the development of proposal call documents.

Will Lipson, Expert Witness

Managing Director, Global Infrastructure and Projects Group (GIPG), KPMG LLP

Qualifications

- B.Sc. Computer Science, University of Toronto
- M.B.A., University of Western Ontario
- Member of the Institute of Certified Management Consultants of Canada
- Corporate Finance designation from the Canadian Institute of Chartered Accounts

Background

Will Lipson is a Managing Director in KPMG's Global Infrastructure and Projects Group, specializing in assisting public agencies with planning and delivering large infrastructure projects. He has spent his 30 years career with KPMG largely dedicated to assisting public sector clients in a variety of matters. Will has expertise in project management, program evaluation, corporate planning and operations, public-private partnerships, financial and economic analysis, and demand forecasting. He is well known by government agencies across North America, and has been qualified as an expert witness on a number of occasions during the course of his career.

Experience and Expertise

- Enbridge — Expert Witness: Financial Feasibility Tests. This engagement consisted of a review of the financial tests used by a local natural gas distributor. The tests are used to determine the financial feasibility of expansion of the gas distribution system to new residential, commercial and industrial customers. Mr. Lipson primarily carried out this review, and focused his attention to the treatment of inflation, phasing assumptions, and time horizons. Following this engagement, Mr. Lipson acted as an expert witness testifying on the utility's financial feasibility tests in a regulatory hearing.
- Industry Canada—Financial Analysis. In this engagement, Mr. Lipson assisted Industry Canada in its evaluation of a large number of grant applicants on a variety of projects. Mr. Lipson initially assisted the Department in the financial and cost/benefit evaluation of a major project in Quebec; he subsequently played a major role in the development of a general process to be used in major future grant applications. Mr. Lipson subsequently assisted in its use of the model to assess several other projects, covering several hundreds of millions of dollars.
- Saskatchewan Crown Management Board—Review of Financial Model. Mr. Lipson assisted the Crown Management Board in its assessment of a major investment project. His assistance including reviewing the financial model developed for the project, verifying its accuracy, assessing and interpreting the results of the model, recommending a course of action for modeling future projects, and suggesting improved procedures and standards to be used in connection with the model
- Toronto Economic Development Corporation (TEDCO)—Arbitration Assistance. Mr. Lipson acted as an expert witness on behalf of TEDCO in an arbitration process pertaining to the payments for the transfer of lands from the Toronto Harbour Commissioners to TEDCO. The agreement between the THC and TEDCO involved the establishment of the annual payment to be made by TEDCO to the THC through the conduct of a study by an independent consultant.

Mr. Lipson was hired by TEDCO to review the study carried out by the independent consultant and examine whether the methodologies and approaches used were appropriate.

- Department of Energy, Mines and Resources—Evaluation of CHIP Program. Mr. Lipson assisted in the evaluation of the effectiveness of the Canadian Home Insulation Program. His analysis involved the use of advanced statistical techniques, such as logic analysis, factor analysis, and regression in an effort to build a path model of the consumer's decision to insulate and of how much to spend on insulation.
- Department of Public Works—Solar Energy Feasibility Model. Mr. Lipson developed a financial model to examine the feasibility of converting conventional energy applications into solar energy applications. The model had to be able to handle systems classified by technology, application, geographic region (e.g., province), starting date, type of application (residential, commercial, industrial), and conventional energy alternatives.
- Department of Energy, Mines and Resources—Program Evaluation of CCA Class 34. Mr. Lipson worked on a study to evaluate CCA Class 34, which allowed accelerated depreciation for a range of energy-conserving and renewable energy-generating equipment. Mr. Lipson was responsible for exploring the decision-making processes of companies who have utilized Class 34, and developing financial models of each of the case study projects. He was also had for developing an extrapolation algorithm to estimate the incrementality of the non-case study projects and a cost-benefit analysis of the program from both a government and social perspective.
- Department of Energy, Mines and Resources—Economic Impacts of Energy Management Investments. This study assessed the economic impacts generated in Canada by investments designed to reduce the demand for energy (e.g., insulation). The work involved an extensive series of interviews with manufacturers and installers of energy management products to estimate the size of the market and the impacts required to produce the products. The Statistics Canada input-output model was used to estimate indirect impacts and the results were included in a user-friendly computerized model which will be used for future policy analysis.
- Department of Energy, Mines and Resources—Evaluation of COSP. In this evaluation, Mr. Lipson was responsible for the financial analyses which were used to assess incrementality of this major government program to fund conversions from oil furnaces to other types of furnaces. His specific responsibilities included designing a major portion of a detailed telephone questionnaire used for the survey of 1,200 homeowners, conducting a number of policy interviews within the government, developing financial models to explain homeowner decision-making, conducting a cost-benefit analysis of the program, and interviewing a number of furnace manufacturers and installers to develop the input data to estimate the economic impacts of the program.
- Toronto Waterfront Revitalization Corporation—Business Plan for Waterfront Redevelopment. Mr. Lipson led the efforts of a group of planners, engineers, financial and legal advisors to write a business plan for the \$12 billion redevelopment of Toronto's waterfront. Mr. Lipson's role included managing the process so that all parties worked with a consistent set of parameters and assumptions. He was also responsible for providing solutions to address the revenue shortfall with innovative financing or private-sector involvement. A unique challenge in this project is the coordination with municipal, provincial and federal government, who were all involved in this significant redevelopment project.
- Ontario Northland Transportation Commission. Mr. Lipson was a lead advisor assisting this crown agency of the Province of Ontario to develop and implement a divestiture strategy for its major operating divisions. Separate selection processes were undertaken for the telecommunications division (which provides services throughout a 200,000 square mile area in northeastern Ontario) and the rail divisions (which provide freight, passenger and excursion services throughout a 700-mile railway network). He also assisted management with the

preparation of current business plans, drafted divestiture documents for the telecommunications division and rail divisions, and marketed the transaction to potential bidders across North America.

- **NAV CANADA—Strategic Planning Assistance.** Mr. Lipson assisted NAV CANADA, operator of Canada's air navigation system, in the planning and implementation of various strategic initiatives including cost reduction, management streamlining and development of technology. Mr. Lipson was responsible for development of an analytical framework for the initiatives, management of the data collection and review process, construction of the model to assess the financial impacts, presentation of the strategic initiatives for approval, and the incorporation of the strategic initiatives into the corporate plan. The scope of the work addressed the full set of functions, services, and activities performed by the organization.
- **Province of British Columbia—Assessment of Financial Status of Provincial Government.** KPMG conducted a major review of the operations of the Province of British Columbia after a change of governments. As part of this review, Mr. Lipson conducted a detailed assessment of the British Columbia Buildings Corporation (BCBC). BCBC is the sole provider of accommodation and property management services to the Ministries of the Provincial Government. Mr. Lipson's review covered every organizational, financial and marketing dimension of BCBC.

Anurag Gupta, Senior Manager
Director, Global Infrastructure and Projects Group
KPMG LLP, Toronto, Canada

- Master of Business Administration, Tulane University, New Orleans
- Bachelors in Mechanical Engineering, Engineering Council, UK
- Bachelor of Science, Calcutta University, India

Anurag has over 10 years combined experience in project and corporate finance with extensive experience in structuring projects and complex transactions in the energy and infrastructure development sectors including experience with public-private partnership (P3 or PPP) models. Prior to KPMG, Anurag was a founding member of the Project Finance group at Infrastructure Ontario (IO), a Crown agency dedicated to delivering major (>\$100MM) public infrastructure projects. Anurag has significant experience in the energy sector having worked at Ontario Power Generation in Toronto and TXU Energy in Dallas in a variety of roles such as trading, structured transactions, quantitative analysis and credit risk.

Anurag has played leading roles in procuring, developing and financing projects in the social infrastructure and energy sectors. Specific energy sector experience includes:

- **Confidential Wind project—Negotiations Assistance** – Recently advised a large municipality in Western Canada negotiate for the purchase of green power from a wind-project developer under a 20-year contract. As part of the KPMG team, provided advice on the business terms and conditions and completed financial and business due diligence into the proposed pricing parameters.
- **Confidential Wind project - Financial Review** – Advised a leading western Canadian power producer conduct an in-depth financial review of a major wind power project for a possible divestiture. Advisory mandate included an independent valuation of the project and providing structuring advice on the proposed off-take agreement.
- **SaskPower, Regina** – Currently assisting SaskPower in their competitive procurements for peaking generation projects sized up to 100 megawatts (MW) to be in-service by December 2011 and for base load generation projects sized between 200 MW and 400 MW to be in-service by December 2012. Anurag is a member of the evaluation committee, provides advice and input on the development of the Request for Proposals (RFP) document and Power Purchase Agreement (PPA), especially on the RFP financial evaluation criteria, PPA financing issues and financial close issues.
- **Hydroelectric Power Generation Capacity Augmentation, Niagara Tunnel Project, Ontario Power Generation, Toronto** – Evaluated this approx. \$1 billion project for commercial completeness and effective risk mitigation. Helped structure the forward starting interest rate swaps used in the financing package. Analyzed creditworthiness of and granted credit to OPG's counterparties on the project
- **Ontario Power Authority's call for Renewable Energy** – Assessed OPG's response to the Ontario Power Authority's Request for Proposals for Renewable Energy by conducting an independent project evaluation and risk assessment.
- **Portlands Energy Centre, Ontario Power Generation and TransCanada Corp., Toronto** – Performed analysis of the economics of the proposed peaker power plant to be built as a joint-venture between TransCanada and Ontario Power Generation in Toronto Portland's. Analysis needed to account specifically for the absence of adequate gas storage and the need to schedule gas on a day-ahead basis.

Hourly Ontario Energy Pricing Model, Ontario Power Generation – Developed and implemented tests to assess the logic and accuracy of Ontario Power Generation's system-wide power forward curve model. Stress tests were designed to take into account the generation stack, dispatch economics, import / export of power from adjacent power control areas and new build economics, including alternative / renewable energy economics.

- **TXU Corporation, Dallas, USA** – Worked in structured finance and trading at this leading merchant energy company with \$14 Billion in assets serving 2.6MM customers in the United States. Performed analysis and financial valuation of commercial deals, capital investment decisions, and asset sales & purchases. Structured complex financial and commodity transactions. Deals ranged in value from \$10MM to \$500MM (NPV)

Selected Transactions

- **Texas Utilities Fuel Company** – Participated in the \$500 million sale of the TXU Fuel Company gas pipeline system for a pre-tax gain of \$390 million. Anurag led the valuation exercise using complex options analysis techniques to model the full revenue potential of the asset. Anurag advised on various divestiture structures such as Master Limited Partnerships (MLP), participated in the road shows and was on the deal team that negotiated and closed the transaction. Sale of the TXU Fuel Company gas pipeline system for a pre-tax gain of \$390 million.
- **Green Mountain Energy's Wind Power Project** - Valued a proposed equity investment in Green Mountain Energy's Wind Power Project. Analyzed and modeled key project risks, such as a shortfall in output and Renewable Energy Credits using a Weibull distribution to model wind power generation, transmission constraints, liquidated damages, etc.
- **Wind Power Contract Restructuring (Confidential Assignment)** – Analyzed the contract structure, economics and operational data from an existing wind power purchase agreement that the company was seeking to restructure. Analyzed alternatives such as a buy-out of the wind project, equity stake, etc.
- **Comanche Peak Nuclear Plant** - Structuring of a \$104MM Nuclear Fuel Supply Agreement, reducing TXU's credit exposure and working capital requirements.
- **Tenaska Power Purchase Agreement** – Restructured a Power Purchase Contract with Tenaska to unlock \$13MM in value. Valued and monetized the in-the-money spread option embedded in the PPA and negotiated the split of the value with Tenaska.
- **Corporate Finance Support** – Modeled working capital requirements for the proposed Credit Suisse (CSFB) and TXU Energy Trading Joint Venture.
- **Transfer Pricing Strategy** – Analyzed and recommended a transfer pricing strategy for TXU's Generation, Wholesale Marketing and Retail Sales divisions. Competing incentives across the three divisions, portfolio optimization issues and trading proprietary versus hedging positions complicated the development of an optimized transfer pricing strategy.
- **Retail Marketing Strategy** - Contributed to developing TXU's retail marketing strategy for the small and medium business segment. Specifically analyzed the use of Third Party Marketing Channels, such as brokers, in expanding retail sales.

Enterprise Wide Risk Management - Reported directly to the Chief Risk Officer to develop a monthly enterprise-wide risk report for review by the Board of Directors. Analyzed financial statements and quantified the impact of adverse market/operating conditions on key financial ratios as part of the report.

Mike Ross, C.M.C., Economist

Mr. Ross graduated from the University of Toronto with a B.Sc. in Mathematics (1968), and an M.A. in Economics (1971). He is a member of the Institute of Management Consultants of Ontario, Canadian Economics Association, American Economics Association, and the Toronto Association of Business Economists. He has over 27 years' experience with KPMG, and became a partner in 1982.

Mike has extensive experience in a wide variety of industries; working for both the public and private side of the transaction. Some of his most relevant experience is highlighted below:

- **Canada Mortgage and Housing Corporation — Residential Property Management Study.** Mr. Ross had overall responsibility for this two-phased study. The first phase developed a profile of the residential property management industry. The second phase identified information needs and research issues in the industry. The work was based on a combination of the analysis of detailed Statistics Canada survey data, and a wide ranging survey conducted by the consultants.
- **Thunder Bay Regional Hospital — Economic Impact of a New Acute Care Hospital.** Mr. Ross was responsible for this study to determine the economic impact of a proposed new acute care hospital in Thunder Bay, and to compare these impacts to the alternative of providing restructured hospital services through an old, existing facility. The analysis reviewed economic impacts in terms of a number of economic impact criteria, including community economic development, employment generation, economic diversification, and municipal finance.
- **Westnor Limited — Economic Impact Analysis.** For this client, Mr. Ross assessed the economic impacts associated with proceeding with the development of the Westnor site into a mixed-use development of office and condominium buildings. Elements of the work include analyzing the capital expenditure data and using the Statistics Canada Input-Output Model of the Canadian Economy to obtain estimates of value-added and employment generated.
- **Private Sector Developer — Resort Feasibility Study.** Mr. Ross undertook the financial analysis and financeability assessment components of a major study, to assess the feasibility of a proposed tourist attraction and hotel complex, to be developed in conjunction with a ski hill near Ingonish, Nova Scotia. KPMG worked in association with a large firm of recreational planners, and a specialized U.S.-based attractions consultant.
- **Region of Durham — Location of Headquarters.** Mr. Ross was the partner responsible for this study in which we analyzed the financial and planning merits of four alternatives for the provision of a Regional Headquarters building for the Region of Durham. The study involved reviewing the regional staff's analysis of the four alternatives and updating the information contained in the staff report. In addition, Mr. Ross examined the future impacts on municipal taxes of the various alternatives. The final report was presented to the regional council.
- **Canada Mortgage and Housing Corporation — Energy Efficiency in New Residential Housing.** On behalf of CMHC, Mr. Ross undertook a major study to identify impediments to the incorporation of energy-efficiency procedures in new housing in Canada. At the core of the study were tasks designed to develop an understanding of the economics of various energy-using appliances in the home, as well as an understanding of the decision-making processes employed by both consumers and developers/builders with respect to the incorporation of energy-saving features in new housing.

- **National Capital Commission — Real Estate Development.** Mr. Ross was responsible for this engagement to provide assistance to the National Capital Commission, who are offering sites in the Ottawa area to private sector developers. We assisted them to develop appropriate tender documents, and also provided assistance assessing and evaluating the financial aspects of the various development proposals received.
- **City of Ottawa — Bid Evaluation Assistance.** Mr. Ross was responsible for this project, in which KPMG was retained by the City of Ottawa to assist in the evaluation of proposals from real estate developers to provide parking facilities in exchange for the right to develop on city owned land.
- **City of North York — City Centre Development.** Mr. Ross undertook a study for the City of North York, to determine the fiscal impact of various development schemes associated with a new City Centre Development beside the existing City Hall. The study was developed to be used as evidence before the Ontario Municipal Board. In addition, Mr. Ross was responsible for a number of other small engagements to review and assess various development proposals and tenders associated with the project.
- **Schedule A Bank — Regional Office Location.** Mr. Ross undertook a study to assess the most appropriate location for a regional office of the retail banking operations of a major Canadian bank. Our approach combined internal interviewing, and the collection and analysis of external data.
- **Ontario Land Corporation — Housing Market Research.** Mr. Ross was responsible for the study of the market for residential housing in a medium-sized Eastern Ontario City. Work was conducted primarily by a review of existing market trends, and detailed interviews with planners, real estate professionals, and other developers in the area.
- **Private Sector Developer — Hotel Feasibility Study.** Mr. Ross was responsible for a hotel feasibility study, for a proposed site in the northeast section of Metro Toronto.
- **Prince Edward Island — Industrial Development Strategy.** Mr. Ross managed a study designed to evaluate the industrial development strategies currently in place in PEI, and to develop objectives and strategies for the next five years. The study included an assessment of government programs currently in place, with recommendations as to changes in their structure and implementation.
- **Urban Development Institute — Impact of Industrial Lot Levies.** On behalf of this real estate industry association, Mr. Ross prepared a report assessing the impact on municipal revenues, economic development, and other matters, of proposed changes in the structure of developer levies for industrial land in Ontario municipalities. The report was used by the industry association to support their submissions to municipal government. The report was subsequently updated and used again in a similar fashion.
- **Sydney, Nova Scotia — Industrial Park Feasibility.** Mr. Ross managed a study to assess the feasibility of developing an industrial park in Sydney. The study included an assessment of the supply and demand of industrial land, as well as a number of interviews with local citizens. With the assistance of an engineering sub-consultant, costs of alternative sites were assessed, and recommendations as to preferred sites were developed.
- **Private Developer — Management Review of Renovated Facility.** On behalf of a private sector client, Mr. Ross conducted a brief management review of a major renovation project in Eastern Canada. The review encompassed construction costs, financing, and plans for leasing the facility.

- **Private Developer — Municipal Financial Impact Assessment.** On behalf of a private developer, Mr. Ross managed a project to assess the financial impact of a proposed residential development on a town east of Toronto.
- **Wimpey — Municipal Financial Impact Assessment.** On behalf of this real estate developer, Mr. Ross managed a project to determine the financial impact of a proposed residential development on the existing taxpayers of a southern Ontario city. Mr. Ross presented the results of the work as evidence before the Ontario Municipal Board. He was subsequently retained to update the client's development strategy.
- **Private Developer — Opportunities for Residential Growth.** Mr. Ross assisted a private sector client in the analysis of opportunities for residential growth in Oakville, a southern Ontario town. The analysis focused on the Toronto and Hamilton metropolitan areas, and was developed to be used as evidence before the Ontario Municipal Board.
- **Analysis of Serviced Land Prices.** KPMG assisted the large Canadian real estate development companies to prepare a submission to the Greenspan Task Force on serviced land prices. Mr. Ross conducted a number of interviews, supervised the statistical analysis of data for a large number of real estate projects, and played a major role in the presentation and explanation of the project results. Our work was incorporated directly into the technical appendices of the Task Force report.
- **Bruce County — Housing Policy Study.** Mr. Ross managed the activities of KPMG and another consulting firm on this project to develop a set of housing policies for Bruce County. The central tasks of the study were to assess the economic impact on the area of the Bruce Nuclear Power Development, and to translate this impact into housing requirements in both the short and medium term.
- **Markham — Retail Market Analysis.** Mr. Ross was the lead consultant for the assessment of the impact of a proposed major shopping centre on the shopping habits of area residents and associated impacts on local merchants. He evaluated the results of a telephone interview program, and analyzed current and expected shopping habits to produce estimates of shifts in patronage. The focus of the analysis was on the impact on existing local merchants.

Jonathan Erling, Engineer
Managing Director, Global Infrastructure and Projects Group,
KPMG LLP, Toronto, Canada

- Bachelor of Engineering Science (Mechanical Option), University of Western Ontario
- Master of Business Administration (Finance), University of Toronto
- Member of Professional Engineers Ontario

Jonathan Erling is a Managing Director in the Global Infrastructure and Projects Group practice of KPMG's Toronto office. He specializes in energy and utility economics, regulatory issues, statistics, and forecasting. He also provides financial modelling, cost allocation and strategic planning services for utility and public-sector clients.

His project experience covers the electricity, water and wastewater, and natural gas distribution sectors. Specific areas of focus include:

- Evaluation of future financial returns and complex financial modeling.
- Business case assessments for new infrastructure development.
- Cost allocation and rate design.
- Various forms of transaction support, including analysis of regulatory issues and energy pricing risks.

Assistance in negotiating long-term agreements for infrastructure development or for power purchase.

Hydro Electric Power Generation

- **Lenders to Abitibi-Bowater—Financial Assessment.** KPMG is providing a variety of financial advisory services to a group of lenders to Abitibi-Bowater during its current restructuring process. Jonathan is taking the lead in providing advice on the potential value of hydro-electric facilities owned by Abitibi in Ontario and Quebec. Issued addressed in our review include the status of water lease rights, the potential for the export of power, ongoing operating costs and requirements for refurbishment, uncertainty in future electricity market prices, and water flow variability.
- **Crown utility—Financial Feasibility.** KPMG helped a Crown utility assess the feasibility of building a new \$300 million hydro-electric dam using project financing. This merchant project would be built to support the operation of a number of mines in a remote northern location and electricity would be sold under long-term Power Purchase Agreements (PPAs).
- **Native Band—Negotiations Assistance.** KPMG was retained by this client to help it negotiate the terms and conditions of an ownership interest in a hydro-electric dam to be built by the provincial Crown utility in the province. In addition to preparing a detailed financial model and evaluating the appropriateness of expected financial returns, KPMG provided advice on a number of strategic issues associated with the project. We examined past and potential future trends in the pricing of energy commodities and drafted price-indexing provisions that would protect our client's interests. We also proposed an allocation of business risks for the project and assessed risks associated with the dispatch of the facility within an integrated river system.
- **Ontario Power Generation—Financial Review.** KPMG was retained by the Board of Directors of OPG to undertake a review of the variance between the company's actual and planned financial performance over the 5-year period from 1999 to 2003. Mr. Erling played a major role in this assignment, and was responsible for validating OPG's methodology and

findings with respect to price and volume variances. Mr. Erling also led the investigation of the impact that fuel price increases and changes in provincial water flows had on achieved net income.

- **Manitoba Hydro—Acquisition Review.** In pursuit of operating cost reductions, Manitoba Hydro purchased the gas distribution assets of privately-owned utility in the province. Combining electricity and natural gas activities was expected to lead to efficiency improvements. Manitoba Hydro retained KPMG to review the results of this acquisition, and to help assess whether forecast cost reductions had actually been achieved. Mr. Erling played a key role in this assignment and acted as an expert witness at the Manitoba Public Utilities Board (PUB).
- **Lakeland Power Group—Valuation of Hydroelectric Generating Assets.** On behalf of a group of utilities in Northern Ontario, KPMG projected financial returns for a hydro-electric plant owned by one of the group members. Our financial analysis was used to determine equity allocations for participants in an amalgamation transaction. Mr. Erling's analysis took into account uncertainty in future market prices for electricity, and annual variations in water flow and, hence, plant output. This project was done prior to opening of the Ontario electricity market, and we thus needed to develop forecasts of seasonal and hourly variation in Ontario electricity prices in the absence of actual market price data.
- **Private Utility—Quantification of Damages.** KPMG helped a private, vertically-integrated utility to quantify the economic loss associated with the implementation of a new electricity market structure in Ontario. As a result of market restructuring, the company's hydro-electric generating activities are now subject to competition and to spot price volatility. For the distribution component of the company's business, the move from a pure Rate of Return to a Performance-Based Regulatory regime (PBR) is causing a reduction in expected profits. KPMG quantified economic losses to support a legal claim. Our model took into account seasonal and annual variation in electricity flows, and the impact of this volatility on production from the company's fossil-fired generating facilities. Mr. Erling was the manager of this project.
- **Newfoundland and Labrador Hydro—Depreciation Study.** KPMG was retained by this utility to review its depreciation policies and to prepare a report for the province's Public Utilities Board. The utility is moving to a Rate of Return basis for tariff regulation. Mr. Erling was the principal researcher on this project. This study involved a survey of depreciation practices among utilities in North America, a review of the utility's future capital expansion plans, and analysis of the implications of different depreciation policies on the province's consumers.

Sector and Policy Analyses

- **Ontario Energy Board—Review of Asset Management Practices.** On behalf of the OEB, KPMG recently completed a major review of asset management practices in the Ontario electricity distribution sector. This study encompassed activities for inspection, maintenance and capital planning. The study included the development of a framework for evaluating decision-making approaches. It was based on field visits to a number of participating LDCs, a survey questionnaire, a review of practices in other jurisdictions, and a review of utility filings on the issue of asset management. Jonathan Erling was the principal author of this study.
- **Ministry of Environment—Financial Guidelines.** MOE retained KPMG to help prepare guidelines for the preparation of Financial Plans by municipal water and wastewater utilities. These plans will include Capital Investment Plans, which identify appropriate levels of capital expenditure, and Funding Plans, which identify the approach used to raising the financial resources necessary. KPMG has played a key role in the development of these guidelines; this

has included the preparation of detailed examples to illustrate a forward-looking approach to financial planning.

- **Ministry of Environment—Regulations for Full Cost Pricing.** KPMG has been retained by the Ministry of Environment in Ontario to develop the content of regulations for full-cost pricing in the water and wastewater sectors. Regulations will also define the content of cost recovery reports, which will ensure that full costs are collected from utility users. Charts of accounts and accounting procedures are also being developed during this engagement. Mr. Erling is the manager of this project.
- **SuperBuild Corporation—Privatization Strategy.** On behalf of SuperBuild, an agency of the Ontario government, KPMG analyzed the Business Models used in a variety of utility sectors. We then assessed the extent to which these models could be used in the delivery of water and wastewater services in Ontario. A major focus of the study was on regulatory mechanisms for price setting. The results of this study are being used by SuperBuild to develop a long-term water and sewer infrastructure investment and financing strategy. Jurisdictions analyzed include Ontario, U.K., Australia and the U.S. Mr. Erling was the Project Manager for this engagement.

Power Generation - Other

- **SaskPower—Procurement Assistance.** KPMG is currently assisting this client with the procurement of 100 MW of gas-fired peaking and 200 to 400 MW of gas-fired base-load generation capacity. KPMG helped in the evaluation of responses to a recent RFQ process and has provided advice on the drafting of a Request for Proposals document to be provided to short-listed proponents. KPMG has also been providing advice on the terms and conditions of the proposed Power Purchase Agreement (PPA). Mr. Erling is the Engagement Director for this project.
- **Wind project—Negotiations Assistance.** KPMG recently helped a large municipality in Western Canada negotiate for the purchase of green power from a wind-project developer under a 20-year contract. Mr. Erling played a key role in this assignment, and is providing advice on the business terms and conditions. He also helped to complete financial and business due diligence into the proposed pricing parameters.
- **Landfill gas project—Financial Evaluation.** On behalf of a large municipality, Mr. Erling prepared a financial and business case assessment of a proposed landfill gas project. This project was subsequently bid into the Ontario Power Authority's Renewables II procurement stream, and received a contract.
- **Bio-gas project—Financial Evaluation.** On behalf of a large municipality, Mr. Erling prepared a financial and business case assessment of a proposed project to use digester gas from a wastewater treatment plant in a cogeneration facility. This facility would generate both electricity and hot water for process purposes. This project subsequently received a contract with the Ontario Power Authority.
- **Landfill gas project—Negotiations Assistance.** Mr. Erling helped an Ontario municipality negotiate with a local utility for the development of a landfill gas generating plant on the municipality's landfill site. He helped to structure royalty payments for the methane gas produced at the landfill. These arrangements took into account municipal preferences with respect to the sharing of electricity pricing risk, the allocation of potential emissions credits, and the financing required for associated municipal infrastructure. This project subsequently received a contract with the Ontario Power Authority.
- **Wind farm—Business start-up advice.** KPMG provided business start-up advice to a private company looking to develop a series of wind farms in Ontario. Mr. Erling has helped this client

prepare a spreadsheet-based financial model of the project. KPMG has also advised this client on alternative sources of financing, including flow-through share structures, and tax issues.

- **Ontario Energy Board—Regulatory Regime for Tax Compliance.** The OEB retained KPMG to review its policies and procedures with respect to electric utilities' recovery of corporate income taxes. Mr. Erling helped prepare worked examples of alternative regulatory treatments of tax expense. He also prepared an analysis that proved that there could be a disconnect between book depreciation expense and the allowances for depreciation expense that were implicit in the OEB's PBR methodology.
- **Ontario Power Generation—Review of Cogeneration Economics.** Over a two-year period, KPMG has completed five separate studies for Ontario Power Generation (OPG) to review the financial feasibility of cogeneration and combined-cycle generating units at industrial plants in the province. OPG required third-party confirmation of the economics of such projects before it could provide rate discounts to electricity customers who would otherwise begin to self-generate.

A key focus of the two most recent studies was the likely impact of the province's plan to deregulate the electricity generation sector and to unbundle electricity rates. Three projects involved cogeneration plants at major oil refineries. Two other projects were at pulp and paper mills in Northern Ontario. Mr. Erling acted as the principal researcher on all of these projects.

- **Integrated Energy Development Corporation—Development of Expert Testimony.** In support of this client's intervention at Ontario Energy Board Hearings, Mr. Erling critiqued Ontario Hydro's plans for incorporating sustainable development concerns in its planning process. Mr. Erling reviewed the consistency of economic development programs with proposals to integrate environmental externalities into costing methods. Mr. Erling also analyzed subsidies for energy efficiency programs and the impact of differences between rural and industrial rates.
- **Merchant Bank—Review of Electricity Cost Outlook.** KPMG provided due diligence assistance to a US merchant bank looking to invest in a major supplier of chemicals. Electricity costs represented over 50% of the variable cost of the company's product line. Mr. Erling assessed the company's procurement strategy for electricity and the outlook for electricity prices in the jurisdictions in which operated. We assessed the likely impact from utility restructuring in a number of the jurisdictions, which spanned both sides of the U.S.-Canada border. Mr. Erling highlighted a number of risks at some of the plants in question, as well as the potential for cogeneration at several of the other plants, which had ready access to a supply of low-cost fuel.
- **U.S. Generation Company—Acquisition Due Diligence.** KPMG provided due diligence assistance to this US utility considering the purchase of OPG generating assets. Mr. Erling assessed the business implications of long-term contracts for the supply and delivery of natural gas to the facilities concerned.
- **Independent Power Producer—Review of Business Planning Tools.** KPMG was retained by a major independent power producer in Ontario to review its business planning tools and approach to optimizing plant operations. Mr. Erling interviewed plant managers and reviewed in detail the company's contracts for the sale of power and for natural gas purchase and delivery. To respond to increased volatility in natural gas prices, Mr. Erling recommended the development of formal software tools to identify optimal operating strategies and to document and codify current business practices.
- **Toronto Waterfront Revitalization Corporation—Project Planning.** Mr. Erling has been providing a wide range of advice with respect to the implementation of a major new district energy system along the Toronto Waterfront. This project, which entails the supply of both

heating and cooling services, will be developed using a Public-Private Partnership model. Mr. Erling's role has included the following:

- Preparing a detailed financial model to assess the project's financial returns under a variety of scenarios, taking into account customer growth, demand levels, pricing strategies and alternative approaches to configuring physical plant.
- Evaluating the business case for alternative energy supply options, including the use of small-scale cogeneration and supply of waste heat from the Portlands Generating Plant.
- Developing a pricing structure and regulatory regime to protect the interests of building owners in the district.
- Conducting a market sounding process with potential private-sector proponents, to assess developer response to alternative deal structures.
- Participating in the development of a detailed development agreement to protect the interests of TWRC and its public stakeholders. This included provisions allowing for cogeneration, the purchase of thermal energy from outside suppliers, and the supply of energy and capacity to external customers.
- Participating in the technical evaluation of responses to a Request for Qualifications process.
- Assisting in the development of a procurement strategy for maximizing competitive tension in the procurement process.

Work on this project is ongoing.

- **District Cooling—Optimization of Operations.** On behalf of this client, Mr. Erling prepared a detailed operating model of the clients' district cooling system. The model takes into account the monthly and hourly load profiles of different customer types, as well as the alternative sources of cooling within the system and their associated operating costs and capacity limits. The model is currently being used to optimize the operating parameters of the cooling system and to refine pricing strategies for different customer groups.

Distribution and Transmission

- **New Brunswick Power—Overhead Capitalization and Corporate Cost Allocation.** Mr. Erling helped this client update their policies and models for the capitalization of overhead costs and for the allocation of general corporate costs to a number of operating entities. Our work included the development of appropriate cost drivers for the allocation of operating and maintenance costs between capital and operating expenses. This study also included a review of the approach that the company used to charge direct labour burdens to capital projects at the company.
- **Union Gas—Overhead Capitalization Policies.** Mr. Erling helped this client update their policies and models for the capitalization of overhead costs. Our work included the development of appropriate cost drivers for the allocation of operating and maintenance costs between capital and operating expenses. This study also included a detailed assessment of the linkage between various support functions and capital activity at the company.
- **Toronto Hydro—Treatment of Tax Variances.** During the OEB's recent 2006 EDR process, KPMG prepared a report for Toronto Hydro on the treatment of tax variances in the LDC rate-setting process. At issue was the treatment of variances between actual and forecast taxes in a regime where revenue and expense variances are not subject to true-ups. Jonathan then provided expert testimony at OEB hearing on our findings and conclusions. Our report was supported by a number of major players in the LDC sector, including Hydro One, Hamilton Utilities Corporation, and PowerStream. The OEB adopted the treatment that was recommended in our report.

- **Enwin Powerlines—Regulatory Asset Assistance.** On behalf of this client, KPMG developed a detailed estimate of the costs that would have been incurred, under normal project management conditions, to install a Customer Information System (CIS) to meet the requirements for opening of the retail market. This counter-factual estimate was needed because the actual circumstances of the client's implementation process did not meet certain tests required by the OEB for cost recovery. Jonathan served as a key member of the project team, and provided input on regulatory issues associated with this estimate.
- **Enwin Utilities—Development of Cost Allocation Methodology.** Mr. Erling managed this project to develop a cost-allocation methodology for Enwin Utilities (EwU), which is an affiliate of the local electricity distribution company in Windsor. EwU provides a variety of shared services to the electricity LDC, the water commission, a telecommunications provider, and a competitive energy affiliate. Services provided include finance, human resources, customer service, stores management, and fleet management. Our cost allocation methodology takes into account the underlying cost drivers in various departments, and calculates end-user shares based on a detailed assessment of services provided.
- **Town of Aurora—Sale of Electricity Distribution Utility.** Mr. Erling provided financial advice to Council at the Town of Aurora during its deliberations over the future of the Town's local distribution utility. Council evaluated a range of options, including two purchase offers, a merger proposal, and operation on a stand-alone basis. Council ultimately decided on a sale option. Mr. Erling also provided advice on terms of the purchase contract.

Frank Chen, Senior Manager
Background

Frank has been with KPMG for nine years and is a Director in the Risk and Compliance practice in Calgary. Frank also serves as the Financial Risk Management / Energy Risk Management service line leader for Western Canada. Frank has over 14 years of experience in developing and implementing risk management solutions for companies engaged in energy transacting activities.

Professional and Industry Experience

Frank is an energy specialist who focuses on risk management practices, energy procurement, hedging strategies, valuation methodologies, risk governance, analytics, and trading infrastructure.

Representative Experience

- Performed a risk assessment of the power business unit of a federal agency in the Northwest. This risk assessment involved a gap analysis of governance, power procurement and credit roles and responsibilities, policies and practices, and back office procedures against leading industry practices. The review included an understanding of hydrologic generation, load/resource balancing, operational planning, and "SLICE" products.
- Performed a risk review of the wholesale energy business activities for three Washington public utility districts and their power management agent. This risk review applied a modified risk control framework to correspond with each utility inherent obligation to serve load. The review included an assessment of the power management agent's supply and demand forecasting practices as well as governance, roles and responsibilities, valuation and market risk measurement, credit, and operational controls.
- Performed a risk assessment of the trading and marketing unit of a southwest investor-owned utility. The risk assessment focused on middle and back office functions and resulted in recommendations addressing model backtesting, valuation adjustments and reserve methodologies, and independent reconciliation practices

Technical Skills

Software:

- Allegro, TriplePoint, Excelergy, Openlink

Publications and Speaking Engagements

- "Enterprise Risk Management", IECA Conference, Orlando, October 2009
 - "Applying Enterprise Risk Analysis to Corporate Ratings," IIA Roundtable, Los Angeles, October 2008
 - "Sarbanes-Oxley, On the Road to Compliance and Beyond," EPRI Conference (San Diego), February 2004
 - "Weather Derivatives – Know Your Options," Energy Houston, February 2000
- "Energy Risk Management Fundamentals," Florida Progress Executive Education, September 1998



TERMS AND CONDITIONS FOR ADVISORY AND TAX SERVICES

1. TERMS AND CONDITIONS.

a. The Terms and Conditions are an integral part of the accompanying Proposal or Engagement Letter from KPMG that identifies the engagement to which they relate.

b. In the event of conflict between the Proposal or Engagement Letter and the Terms and Conditions, the Terms and Conditions shall prevail unless specific reference to a provision is made in the Proposal or Engagement Letter. Other capitalized words in the Terms and Conditions shall have the meanings given to them in the Proposal or Engagement Letter.

2. SERVICES.

KPMG will use reasonable efforts to complete the performance of the services within any agreed-upon time-frame. It is understood and agreed that KPMG's services may include advice and recommendations; but all decisions in connection with the implementation of such advice and recommendations shall be the responsibility of, and made by, Client. KPMG will not perform management functions or make management decisions for Client. Nothing in the Terms and Conditions shall be construed as precluding or limiting in any way the right of KPMG to provide services of any kind or nature whatsoever to any person or entity as KPMG in its sole discretion deems appropriate.

3. CLIENT RESPONSIBILITIES.

a. Client agrees to cooperate with KPMG in the performance of the services under the Engagement Letter and shall provide or arrange to provide KPMG with timely access to and use of the personnel, facilities, equipment, data and information to the extent necessary for KPMG to perform the services under the Engagement Letter. Client shall be responsible for the performance of its employees and agents and for the accuracy and completeness of all data and information provided to KPMG for purposes of the performance by KPMG of its services hereunder. The Proposal or Engagement Letter may set forth additional responsibilities of Client in connection with the engagement. Client acknowledges that Client's failure to perform these obligations could adversely impact KPMG's ability to perform its services.

b. Client agrees that Client, and not KPMG, shall perform the following functions: (i) make all management decisions and perform all management functions; (ii) designate an individual who possesses suitable skill, knowledge and experience, preferably within senior management, to oversee the performance of the services under the Engagement Letter, and to evaluate the adequacy and results of such services; (iii) accept responsibility for the results of such services; and (iv) establish and maintain internal controls over the processes with which such services are concerned, including, without limitation, monitoring ongoing activities.

c. Client acknowledges and agrees that KPMG will, in performing the services, base its conclusions on the facts and assumptions that Client furnishes and that KPMG may use data, material, and other information furnished by or at the request or direction of Client without any independent investigation or verification and that KPMG shall be entitled to rely upon the accuracy and completeness of such data, material and other information. Inaccuracy or incompleteness of such data, material and other information furnished to KPMG could have a material effect on KPMG's conclusions.

d. Client acknowledges that information made available by it, or by the others on Client's behalf, or otherwise known to partners or staff of KPMG who are not engaged in the provisions of the services shall not be deemed to have been made available to the individuals within KPMG who are engaged in the provision of the services hereunder. Client undertakes that, if anything occurs after information is provided by Client to KPMG to render such information untrue, unfair or misleading, Client shall promptly notify KPMG.

4. REPORTING.

a. During the performance of the services, KPMG may supply oral, draft or interim advice, reports or presentations but in such circumstances KPMG's written advice or final written report shall take precedence. No reliance should be placed by Client on any oral, draft or interim advice, reports or presentations. Where Client wishes to rely on oral advice or oral presentation, Client shall inform KPMG and KPMG will provide documentary confirmation of the advice concerned.

b. Subsequent to the completion of the engagement, KPMG will not update its advice, recommendations or work product for changes or modification to the law and regulations, or to the judicial and administrative interpretations thereof, or for subsequent events or transactions, unless

Client separately engages KPMG to do so in writing after such changes or modifications, interpretations, events or transactions.

5. WORKING PAPERS AND USE OF REPORTS.

KPMG retains all rights in all methodologies, know-how, knowledge, applications and software developed by KPMG either prior to or during the engagement. KPMG also retains all rights (including copyright) in all reports, written advice and other working papers and materials developed by KPMG during the engagement. Unless contemplated by the Engagement Letter, all reports and written advice are intended solely for Client's internal use and, where applicable, government taxation authorities, and may not be edited, distributed, published, made available or relied upon by any other person without KPMG's express written permission. If such permission is given, Client shall not publish any extract or excerpt of KPMG's written advice or report or refer to KPMG without providing the entire advice or report at the same time. Subject to the restrictions of Section 6, KPMG is entitled to use or develop the knowledge, experience and skills of general application gained through performing the engagement.

6. CONFIDENTIALITY.

a. Except as described in section 5 above, Client will treat in confidence any KPMG methodologies, know-how, knowledge, application or software identified by KPMG as confidential information of KPMG, and will not use or disclose such confidential information of KPMG to others.

b. KPMG will treat as confidential all proprietary information obtained from Client in the course of the engagement and, except as described in this section, KPMG will only use such information in connection with the performance of its services.

c. The above restrictions shall not apply to any confidential information that: (i) is required by law or professional standards applicable to KPMG to be disclosed; (ii) that is in or hereafter enters the public domain; (iii) that is or hereafter becomes known to Client or KPMG, as the case may be, without breach of any confidentiality obligation; or (iv) that is independently developed by Client or KPMG, as the case may be.

d. KPMG shall be entitled to include a description of the services rendered in the course of the engagement in marketing and research materials and disclose such information to third parties, provided that all such information will be rendered anonymous and not subject to association with Client.

e. KPMG shall be entitled to share all Client confidential information with all other member firms of KPMG International performing services hereunder. KPMG may also use confidential information to offer services that may be of interest to Client. KPMG may retain and may disclose to other member firms of KPMG International, subject to terms of this section, copies of Client's confidential information required for compliance with applicable professional standards or internal policies or quality reviews.

f. Professional standards require KPMG personnel performing any audit or assurance services for clients to discuss or have available to them all information and materials that may affect the audit or assurance engagement. Client authorizes, if Client is or becomes an assurance Client, KPMG personnel performing services under the engagement to make available to the KPMG assurance engagement team and other KPMG personnel, the findings, observations and recommendations from the engagement and agrees that KPMG may use all such findings, observations and recommendations in KPMG's assurance engagement.

7. PERSONAL INFORMATION.

KPMG may be required to collect, use and disclose personal information about individuals during the course of this engagement. KPMG will only collect, use or disclose such personal information in accordance with the KPMG Privacy Policy, a copy of which will be provided on request.

8. INFORMATION PROCESSING OUTSIDE OF CANADA.

In some circumstances, personal and/or confidential information collected by KPMG during the course of this engagement may be processed and stored outside of Canada by KPMG or a third party processor, and such personal and/or confidential information may be subject to disclosure in accordance with the laws applicable in the jurisdiction in which the information is processed or stored. These laws may not provide the same level of protection for such information as will Canadian laws.



TERMS AND CONDITIONS FOR ADVISORY AND TAX SERVICES

9. CONSENTS AND NOTICES.

Client represents and warrants that: (i) it will obtain all consents required by law to permit KPMG to collect, use and disclose all personal information that may reasonably be required in the course of the engagement, and (ii) it has provided notice of KPMG's potential processing of information outside of Canada (as described in paragraph 8 above) to all individuals whose personal information is disclosed to KPMG.

10. TAXES/BILLING/EXPENSES/FEES.

a. All fees and other charges do not include any applicable federal, provincial, or other goods and services or sales taxes, or any other taxes or duties whether presently in force or imposed in the future. Any such taxes or duties shall be assumed and paid by Client without deduction from the fees and charges hereunder.

b. Bills, including, without limitation, a charge on account of all reasonable expenses, including travel, meals, accommodations, long distance, telecommunications, photocopying, delivery, postage, clerical assistance and database research will be rendered on a regular basis as the engagement progresses. Accounts are due when rendered. Interest on overdue accounts is calculated at the rate noted on the invoice commencing 30 days following the date of the invoice.

c. Without limiting its rights or remedies, KPMG shall have the right to halt or terminate entirely its services until payment is received on past due invoices.

d. In the event that the engagement is terminated and Client proceeds to complete the transaction or financing within 18 months from the termination date, then the full amount of any Completion Fee shall be payable on closing of the transaction or the completion of financing, regardless of whether KPMG provided further service.

11. LIMITATION ON WARRANTIES.

THIS IS A SERVICES ENGAGEMENT. KPMG WARRANTS THAT IT WILL PERFORM SERVICES HEREUNDER IN GOOD FAITH WITH QUALIFIED PERSONNEL IN A COMPETENT AND WORKMANLIKE MANNER IN ACCORDANCE WITH APPLICABLE INDUSTRY STANDARDS. KPMG DISCLAIMS ALL OTHER WARRANTIES, REPRESENTATIONS OR CONDITIONS, EITHER EXPRESS OR IMPLIED, INCLUDING, WITHOUT LIMITATION, WARRANTIES, REPRESENTATIONS OR CONDITIONS OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

12. LIMITATION ON LIABILITY.

a. Client agrees that KPMG shall not be liable to Client for any actions, damages, claims, liabilities, costs, expenses, or losses in any way arising out of or relating to the services performed hereunder.

b. In the event of a claim by any third party against KPMG that arises out of or relates to the services performed hereunder, Client will indemnify KPMG from all such claims, liabilities, damages, costs and expenses, including, without limitation, reasonable legal fees.

c. In no event shall KPMG be liable for consequential, special, indirect, incidental, punitive or exemplary damages, costs, expenses, or losses (including, without limitation, lost profits and opportunity costs). In any action, claim, loss or damages arising out of the engagement, Client agrees that KPMG's liability will be several and not joint and several. Client may only claim payment from KPMG of KPMG's proportionate share of the total liability based on degree of fault.

d. For purposes of this section, the term KPMG shall include its associated and affiliated entities and their respective partners, directors, officers and employees. The provisions of this section shall apply regardless of the form of action, damage, claim, liability, cost, expense, or loss, whether in contract, statute, tort (including, without limitation, negligence) or otherwise.

13. LEGAL PROCEEDINGS.

a. Client agrees to notify KPMG promptly of any request received by Client from any court or applicable regulatory authority with respect to the services hereunder, KPMG's advice or report or any related document.

b. If KPMG is required by law, pursuant to government regulation, subpoena or other legal process or requested by Client to produce documents or personnel as witnesses arising out of the engagement and KPMG is not a party to such proceedings, Client shall reimburse KPMG at standard billing rates for professional time and expenses, including, without limitation, reasonable legal fees, incurred in responding to such requests.

c. When requested or required by law, subpoena or other legal process or otherwise, that KPMG provide information and documents relating to Client's affairs, KPMG will use all reasonable efforts to refuse to provide information and documents over which Client asserts legal privilege or which has been acquired or produced in the context of the engagement of legal counsel by or on behalf of Client, except where providing such copies, access or information is required by law, by a provincial Institute/Ordre pursuant to its statutory authority, or a public oversight board in respect of reporting issuers (both in Canada and abroad) pursuant to its contractual or statutory authority. Where Client provides any document to KPMG in respect of which Client wishes to assert legal privilege, Client shall clearly mark such document "privileged" and shall otherwise clearly advise KPMG that Client wishes to maintain legal privilege in respect thereof.

14. LIMITATION PERIOD.

No action, regardless of form, arising under or relating to the engagement, may be brought by either party more than one year after the cause of action has accrued or in any event not more than five years after completion of the engagement in the case of an advisory services engagement and not more than eight years after completion of the engagement in the case of a tax services engagement, except that an action for non-payment may be brought by a party not later than one year following the date of the last payment due to such party hereunder. For purposes of this section, the term KPMG shall include its associated and affiliated entities and their respective partners, directors, officers and employees.

15. TERMINATION.

Unless terminated sooner in accordance with its terms, the engagement shall terminate on the completion of KPMG's services hereunder, which completion shall be evidenced by the delivery by KPMG to Client of the final invoice in respect of the services performed hereunder. Should Client not fulfill its obligations set out herein or in the Engagement Letter and in the absence of rectification by Client within 10 days, KPMG may, upon written notice, terminate its performance and will not be responsible for any loss, cost or expense resulting. The engagement may be terminated by either party at any time by giving written notice to the other party not less than 30 calendar days before the effective date of termination. Upon early termination of the engagement, Client shall be responsible for the payment to KPMG for KPMG's time and expenses incurred up to the termination date, as well as reasonable time and expenses to bring the engagement to a close in a prompt and orderly manner.

16. E-MAIL COMMUNICATION.

Client recognizes and accepts the risks associated with communicating by Internet e-mail, including (but without limitation) the lack of security, unreliability of delivery and possible loss of confidentiality and privilege. Unless Client requests in writing that KPMG does not communicate by Internet e-mail, Client assumes all responsibility or liability in respect of risk associated with its use.

17. POTENTIAL CONFLICTS OF INTEREST.

Except as otherwise set out herein, Client should be aware that it is not uncommon for KPMG to be auditors and/or advisors of more than one of the parties involved in a transaction. In such situations, KPMG takes appropriate measures to ensure that strict confidentiality is maintained in all respects. If these circumstances are identified, KPMG will advise Client of that fact, subject to confidentiality requirements, and will consider with Client what further measures, if any, are appropriate. Client further acknowledges that at some point KPMG may act contrary to Client's interest on unrelated matters.

18. FORCE MAJEURE.

Neither Client nor KPMG shall be liable for any delays resulting from circumstances or causes beyond its reasonable control, including, without limitation, fire or other casualty, act of God, strike or labour dispute, war or other violence, or any law, order or requirement of any governmental agency or authority.

19. INDEPENDENT CONTRACTOR.

It is understood and agreed that each of the parties hereto is an independent contractor and that neither party is, nor shall be considered to be, an agent, distributor or representative of the other. Neither party shall act or represent itself, directly or by implication, as an agent of the



TERMS AND CONDITIONS FOR ADVISORY AND TAX SERVICES

other or in any manner assume or create any obligation on behalf of, or in the name of, the other.

20. SURVIVAL.

Sections 1 to 17 and 20, 21, 25, 26 and 30 hereof shall survive the expiration or termination of the engagement.

21. SUCCESSORS AND ASSIGNS.

The Terms and Conditions and the accompanying Proposal or Engagement Letter shall be binding upon the parties hereto and their respective associated and affiliated entities and their respective partners, directors, officers and employees and successors and permitted assigns. Except as provided below, neither party may assign, transfer or delegate any of the rights or obligations hereunder without the prior written consent of the other party. KPMG may assign its rights and obligations hereunder to any affiliate or successor in interest to all or substantially all of the assets or business of the relevant KPMG practice, without the consent of Client. In addition, KPMG may engage independent contractors and member firms of KPMG International to assist KPMG in performing the services hereunder.

22. SEVERABILITY.

The provisions of the Terms and Conditions and the accompanying Proposal or Engagement Letter shall only apply to the extent that they are not prohibited by a mandatory provision of applicable law. If any of these provisions shall be held to be invalid, void or unenforceable, then the remainder of the Terms and Conditions and the attached Proposal or Engagement Letter, as the case may be, shall not be affected, impaired or invalidated, and each such provision shall be valid and enforceable to the fullest extent permitted by law.

23. ENTIRE AGREEMENT.

The Terms and Conditions and the accompanying Proposal or Engagement Letter including, without limitation, Exhibits, constitute the entire agreement between KPMG and Client with respect to the engagement and supersede all other oral and written representation, understandings or agreements relating to the engagement.

24. GOVERNING LAW.

The Terms and Conditions and the accompanying Proposal or Engagement Letter shall be subject to and governed by the laws of the province in which KPMG's principal office performing the engagement is located (without regard to such province's rules on conflicts of law) and all disputes arising hereunder or related thereto shall be subject to the exclusive jurisdiction of the courts of such province.

25. PUBLICITY.

Upon the closing of a transaction, KPMG will have the right (but shall not be obliged), at its expense, to publicize its association with the transaction by way of public announcement in "tombstone" or similar format, subject to prior review of the wording for any such announcement with Client.

26. KPMG INTERNATIONAL MEMBER FIRMS.

In the case of multi-firm engagements, all member firms of KPMG International performing services hereunder shall be entitled to the benefits of the Terms and Conditions. Client agrees that any claims that may arise out of the engagement will be brought solely against KPMG, the contracting party and not against any other KPMG International member firms.

27. SARBANES-OXLEY ACT.

Except as set forth in the Engagement Letter, Client acknowledges that completion of the engagement or acceptance of KPMG's reports, advice, recommendations and other deliverables resulting from the engagement will not constitute a basis for Client's assessment of internal control over financial reporting or Client's evaluation of disclosure controls and procedures, or its compliance with its principal officer certification requirements under Section 302 of the *Sarbanes-Oxley Act of 2002* (the "Act"). The engagement shall not be construed to support Client's responsibilities under Section 404 of the Act requiring each annual report filed under Section 13(a) or 15(d) of the *Securities Exchange Act of 1934* to contain an internal control report from management.

28. NATIONAL INSTRUMENT 52-109.

Except as set forth in the Engagement Letter, Client acknowledges that completion of the engagement or acceptance of KPMG's reports, advice,

recommendations and other deliverables resulting from the engagement will not constitute a basis for Client's evaluation of disclosure controls and procedures, or its compliance with its CEO/CFO certification requirements under *National Instrument 52-109, Certification of Disclosure in Issuers' Annual and Interim Filings*, including those related to the design of internal control over financial reporting.

29. SPECIFIC ACCOUNTING ADVICE.

Except as set forth in the Engagement Letter, the engagement does not contemplate the provision of specific accounting advice or opinions or the issuance of a written report on the application of accounting standards to specific transactions and facts and circumstances of Client. Such services, if requested, would be provided pursuant to a separate engagement.

30. TAX SERVICES.

a. If tax work is specifically requested by Client, KPMG will perform the procedures in accordance with this section. KPMG will base its findings exclusively on the facts and assumptions provided to KPMG by Client and Client's personnel and advisors. KPMG will consider the applicable provisions of the relevant taxing statutes, the regulations thereunder, applicable tax treaties and judicial and administrative interpretations thereof. KPMG will also take into account all specific proposals to amend such statutes, regulations and treaties publicly announced prior to the date of KPMG's reports, based on the assumption that these amendments will be enacted substantially as proposed. These authorities are subject to change, retroactively and/or prospectively, and any such changes could affect the validity of KPMG's findings and may result in incremental taxes, interest or penalties. KPMG's findings will not otherwise take into account or anticipate any changes in law or practice, by way of judicial, governmental or legislative action or interpretation. Unless Client specifically requests otherwise, KPMG will not update tax work to take any such changes into account.

b. KPMG will use professional judgment in providing advice, and will, unless Client instructs otherwise, take the position most favourable to Client whenever reasonable. All returns are subject to examination by tax authorities, and KPMG's advice may be audited and challenged by a tax authority. Client understands that KPMG's conclusions are not binding on tax authorities or the courts and should not be construed as a representation, warranty or guarantee that the tax authorities or courts will agree with KPMG's conclusion.

c. Client should consult with and/or engage legal counsel for the purpose of advising on legal aspects of matters on which KPMG provides its tax advice and drafting any legal documents and/or agreements that may be required. To the extent legal counsel or other professional service providers are required, Client is exclusively responsible for engaging and paying such service providers.

d. Client is also responsible for ensuring that KPMG's advice is implemented strictly in accordance with KPMG's recommendations. KPMG is not responsible for any penalties or interest assessed against Client as a result of a failure by Client to provide KPMG with accurate and complete information.

e. Unless expressly provided for, KPMG's services do not include representing Client in the event of a challenge by the CRA or other tax or revenue authorities.

31. LLP.

KPMG LLP is a registered limited liability partnership ("LLP") established under the laws of the Province of Ontario and, where applicable, has been registered extra-provincially under provincial LLP legislation. KPMG is a partnership, but its partners have a degree of limited liability. A partner is not personally liable for any debts, obligations or liabilities of the LLP that arise from a negligent act or omission by another partner or any person under that other partner's direct supervision or control. The legislation relating to limited liability partnerships does not, however, reduce or limit the liability of the firm. The firm's insurance exceeds the mandatory professional indemnity insurance requirements established by the various Institutes/Ordre of Chartered Accountants. Subject to the other provisions hereof, all partners of the LLP remain personally liable for their own actions and/or actions of those they directly supervise or control.



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CONFIDENTIAL

Manitoba Hydro-Electric
The Manitoba Hydro-Electric Board
Attention: Mr. William C. Fraser F.C.A.
360 Portage Avenue
Winnipeg, MN R3C 0G8

December 15, 2009

Gentlemen:

KPMG LLP ("KPMG") is pleased to submit this proposal (the "Engagement") to The Manitoba Hydro-Electric Board ("Manitoba Hydro") to act as Manitoba Hydro's agent to review and validate the services provided by one of Manitoba Hydro's external consultants (the "Consultant") with respect to decisions made at Manitoba Hydro. This Engagement supersedes and replaces in its entirety the earlier proposal and agreement dated November 20, 2009 from KPMG to Manitoba Hydro, which was signed by Manitoba Hydro on November 26, 2009.

This letter describes the objective of our Engagement, the nature of the services that we will provide, and our professional arrangements. The parties agree that the provisions of this Engagement can, shall, and do apply *nunc pro tunc* to all activity carried out by KPMG pursuant to the earlier proposal and agreement dated November 20, 2009.

KPMG and Manitoba Hydro are entering into this superseding Engagement after consultations that have included, among other things, consideration of the letter addressed to KPMG dated December 8, 2009, that asked KPMG to "cease and desist" from activity concerning what it described as a "whistleblower complaint." The cease and desist letter was not signed, but referred to certain confidentiality provisions in a Master Services Agreement between the Consultant and Manitoba Hydro. Manitoba Hydro and KPMG understood the cease and desist letter to be from the Consultant whose services Manitoba Hydro is engaging KPMG to review and validate under this Engagement.

Under this Engagement, KPMG will act as Manitoba Hydro's agent to review and validate the Services provided by the Consultant retained by Manitoba Hydro under the Master Services Agreement (the "MSA") which states that it is effective as at the 1st day of January, 2006, and which concerns what it refers to as "consultation related to integration of quantitative risk management activities in the Power Supply Business Unit of Hydro." KPMG's services in this Engagement will be provided in connection with Section 5.7 of the MSA, which provides in relevant part that "Hydro shall review, read, approve and validate all Services provided by the Consultant." ("Services" is a defined term in the MSA.) Manitoba Hydro has determined that because of the statements and assertions made by the Consultant and their complexities, it is necessary and appropriate for KPMG as agent to perform a review and validation as provided in the MSA. For certainty, KPMG's appointment as agent hereunder does not confer the authority of KPMG to legally bind Manitoba Hydro or permit KPMG to make representations on behalf of Manitoba Hydro.

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It is acknowledged by both parties that these terms may change as the engagement progresses. Any substantive changes in the terms of the Engagement will be mutually agreed to in writing by both parties.

We confirm we are not aware of any conflicts associated with KPMG accepting this Engagement. Our US firm has provided certain services to ICF Consulting unrelated to this engagement. As a result and in accordance with our firm policies the KPMG engagement team assisting Manitoba Hydro will exclude any individual that has previously provided professional services to ICF.

Manitoba Hydro acknowledges that during the course of this Engagement, KPMG may be required to engage third party consultants and or employees and/or partners of KPMG LLP (U.S.) to assist in completing certain aspects of this Engagement. If KPMG determines that such assistance is required to complete this Engagement, KPMG shall be permitted to retain such third parties upon receipt of consent of Manitoba Hydro, such consent shall not be unreasonably withheld or delayed, provided, that such consent may require that such parties agree to be bound by the confidentiality provisions contained herein and/or be otherwise bound in confidence to KPMG to keep all information disclosed hereunder confidential on terms no less stringent to those contained herein.

Background

Manitoba Hydro has received reports from the Consultant. The reports relate to mishandling by management in areas such as drought risk management, long-term contracts, hydrologic modeling, specific power trading issues, and governance structures for power trading. KPMG has also received a "cease and desist" letter from the Consultant expressing concerns about confidentiality of the Consultant's work.

Confidentiality

All information received by KPMG in connection with this Engagement, including but not limited to information of any kind provided to Manitoba Hydro by the Consultant, has been, and will continue to be, held in strict confidence in accordance with Section 6 of the terms and conditions attached hereto and will not be disclosed to anyone except Manitoba Hydro's directors, officers, employees and agents, including without limitation its attorneys, who need to know such information or except as otherwise permitted by Section 6 of the terms and conditions attached hereto.

KPMG will not disclose the information it receives in connection with this Engagement to anyone employed by KPMG outside of the team described below, their administrative support personnel employed by KPMG and KPMG's internal legal counsel. KPMG will not disclose the information it receives in connection with this Engagement to any of KPMG's affiliates or to any member firms of KPMG International, except in accordance with this Engagement Letter.

KPMG will not use the information it receives in connection with this Engagement for any purpose other than the review and validation referred to in Section 5.7 of the MSA. In particular, and without limitation, KPMG will not use the information it receives concerning the Consultant or provided to Manitoba Hydro by the Consultant for any purpose in competition with the Consultant and agrees, for a period of one year following the completing of this Engagement, not to solicit or bid on any proposal



on which Consultant is invited to bid in which it would have an unfair competitive advantage over Consultant as a result of any confidential information received from Hydro belonging to Consultant.

Reporting

We will report to and provide regular briefing to Manitoba Hydro's senior management, the Manitoba Hydro Board, and any appropriate committee of the Board.

Scope of Work

For this review, you have asked us to undertake the following activities:

- Review the assertions that have been made by the Consultant and the reports and Services provided by the Consultant.
- Identify the positions of Manitoba Hydro staff on each of the assertions and the Services provided by the Consultant.
- Perform a review and validation study of the merits of the Consultant's assertions and Services.
- Prepare a report summarizing our findings, on or before December 31, 2009.

If assertions require further expert study and analysis, we will work with the President & CEO and others as necessary to arrange for the additional work product and associated funding.

Approach

We propose to undertake this engagement through a two-phased approach. Our proposed phases are as follows:

1. Phase One: Diagnostic Review and Scoping

We envisage Phase One as a diagnostic phase in which we undertake an initial review of the consultant's assertions, services, and surrounding circumstances. The objective of this work will be to quickly get up to speed on the relevant issues and to identify the key questions that will need to be addressed by the Review. In the event that there are a large number of assertions, there may need to be some prioritization of those subject to further investigation and analysis. We will provide a detailed work plan, with staffing plans, timelines, and associated professional fees.

Based on our preliminary analysis and discussions with you, we expect that there may be approximately 10 to 20 issues that will need to be addressed by KPMG during Phase Two in order to assess the Consultant's assertions.

2. Phase Two: Detailed Analysis and Reporting

During Phase Two, we will carry out the detailed work plan that is developed during Phase One. This work plan will include the preparation of a formal report. The details of the Phase Two work plan are yet to be defined in detail.



The Nature of Anticipated Use of Corporate Resources

The nature of anticipated uses of corporate resources will vary by phase. In general, we anticipate requiring access to senior management such as SVP, Power Supply and the SVP's direct reports, in particular the PS&O leadership; CFO and finance leadership; President and CEO's office, etc. We anticipate requiring access to background reports referenced in any assertions made by the Consultant and any reports/materials produced by Manitoba Hydro or its advisors to in response to the assertions made by the Consultant.

We also anticipate requiring access to power trading policies/power trading reports / power production reports / minutes / power point / MS word / Excel records of key decision making committees related to power exports, production forecasting or similar bodies.

To the extent necessary to gain an understanding of the model logic, we may require access to the programming logic / code modules of key planning tools such as HERMES / SPLASH and access to the expert operators of such tools. We also anticipate requiring access to the input data and methodologies used in the analysis generated by HERMES and SPLASH. As the engagement progresses, we may identify other resources that we may need access to.

Moreover, in general our requests for access to staff and/or data/reports/methodologies/policies will be driven by a positive requirement to either adequately understand the assertions made by the Consultant, any Manitoba Hydro position's on these assertions and/or to understand and analyze Manitoba Hydro's key decisions and decision making process as it relates to its power production planning and sales process.

The Engagement Team

We have assigned to this engagement a very senior team with experience in the following areas:

- Management reviews and the assessment of decision-making processes, particularly in the development and management of long-term contractual arrangements.
- Analysis of complex issues.
- Energy issues and utility regulation.

In the section below, we summarize the backgrounds of the specific individuals identified for this engagement.

- **Bob Owen.** Bob Owen is well known to management at Manitoba Hydro, having served for many years as your principal KPMG relationship partner. Bob Owen was also a key member of KPMG's team in our review of the Centra Gas acquisition. Bob is based in Winnipeg and accordingly has a good understanding of local sensitivities regarding this engagement. Bob's principal role will be to serve as the client service partner responsible for the overall quality of our services and timely delivery of our project reports.
- **Stephen Beatty.** Stephen Beatty is a Partner, and is the head of KPMG's Global Infrastructure Practice in the Americas. Stephen provided advice to Manitoba Hydro with respect to its agreement with the Nisichawayasihk Cree Nation for the development of the Wuskwatim Project. Steve has advised public sector clients extensively on issue related to PPP policy development,



project financing, project scoping, and process design. Stephen, as are the remaining members of the team, is based out of KPMG's Toronto office. Stephen will be responsible for the management and direction of this project.

- **Will Lipson.** Will Lipson is a Managing Director who specializes in helping public agencies plan and deliver large infrastructure projects. Will has expertise in project management, program evaluation, corporate planning and operations, public-private partnerships, financial and economic analysis, and demand forecasting. He is well known by government agencies across North America, and has been qualified as an expert witness on a number of occasions during the course of his career.
- **Anurag Gupta.** Anurag is a Director. Anurag has over 10 years combined experience in project and corporate finance with extensive experience in structuring projects and complex transactions in the energy and infrastructure sectors. Prior to joining KPMG, Anurag had senior positions with Infrastructure Ontario, Ontario Power Generation, and TXU Energy in Dallas, where his work involved energy trading, structured transactions and finance, quantitative and financial analysis, and credit risk assessments.
- **Michael Ross.** Michael is a Senior Associate at KPMG. Together with Bob Owen, Michael led our work for Manitoba Hydro to review the synergy savings from the acquisition of Centra Gas. Michael was for many years the Partner in Charge of KPMG's Economics Group and has extensive experience in the use of economic methods and evaluation techniques. He has directed or carried out studies involving program evaluation, economic impact, and cost-benefit analyses.
- **Jonathan Erling.** Jonathan is a Managing Director. Jonathan was involved in our review of the Centra Gas acquisition and acted as an expert witness on this issue at the Manitoba Public Utility Board. Jonathan's practice focuses almost exclusively on issues related to energy economics and utility regulation. He provides financial modelling, cost allocation and strategic planning services for utility and power generation clients. He has recently undertaken a number of assignments for the Ontario Energy Board (OEB), in addition to acting as an expert witness at OEB hearings.
- **Frank Chen.** Frank is a Senior Manager in our Calgary office. He brings experience in energy trading, risk systems and documentation.

Resumes of the above individuals have been included as an appendix to this letter.

This core team of senior professionals will lead and carry out our work on Phase One. This core team of senior professionals identified above will be supported by other resources as appropriate.

Business Arrangements

We will bill for our services at the following hourly rates:

| | |
|----------------|----------------|
| Bob Owen | \$315 per hour |
| Stephen Beatty | \$490 per hour |
| Will Lipson | \$490 per hour |
| Anurag Gupta | \$315 per hour |



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| | |
|-----------------|----------------|
| Michael Ross | \$450 per hour |
| Jonathan Erling | \$375 per hour |
| Frank Chen | \$315 per hour |

GST and out-of-pocket expenses will be billed in addition to the amounts noted above. We expect that the majority of our out-of-pocket expenses will relate to travel and accommodation.

Neither the amount of our fees nor the payment of our fees and expenses will depend upon the results of our work. This engagement will be subject to the standard terms and conditions as reflected in the attachment to this letter.

Upon completion of Phase One we will be in a position to confirm, based on the number and complexity of the issues identified that will need to be addressed, the timing of delivery of our Phase Two Report, remaining fully cognizant of the December 31st target.

We would be pleased to discuss changes to our proposed scope of work or business arrangements if the foregoing letter does not match your exact requirements. In the event that the letter does address your requirements, please confirm your agreement with the foregoing by signing and dating a copy of this letter and returning it to us.

Yours very truly,

R.J. Owen, C.A.
Partner

We acknowledge that we have read the foregoing agreement and agree to be bound by it.

Dec 18/09

The Manitoba Hydro-Electric Board

Date

Appendix A

Bob Owen, Client Service Partner

Role: Bob Owen will serve Manitoba Hydro as client service partner. He will work with the project team to ensure that all of our commitments are delivered on a timely basis and to your satisfaction. Bob has over 30 years of public accounting experience with KPMG, and has 20 years of experience as a member of the Manitoba Hydro audit engagement team. In addition to serving his clients, Bob is also the Professional Practice Partner-in-Charge for the Winnipeg office. Bob will attend all meetings with Manitoba Hydro's Audit Committee, Board of Directors and senior management and oversee the delivery of all our services.

Some of Bob's most significant clients include or have included: Investors Group, Agriculture and Agri-Food Canada, Cargill Limited, Jovian Capital Corporation, Pollard Banknote Income Fund, Ladco Company Limited, Bird Construction, Ceridian Canada Ltd., Old Dutch foods Ltd., Ducks Unlimited Canada, Lake Louise Limited Partnership and Canad Inns.

Education and Affiliations:

- Bachelor of Arts degree, University of Manitoba
- Bachelor of Commerce (Honours) degree, University of Manitoba
- Chartered Accountant, Institute of Chartered Accountants of Manitoba

Stephen Beatty, Project Manager

Role: Mr. Stephen Beatty is a Managing Director of the Public/Private Practice of KPMG LLP in Toronto. Steve is also Head of KPMG's Global Infrastructure and Projects Group for the Americas. He co-chairs KPMG Canada's Privatization/Private Finance Network and is the Canadian Representative of KPMG's Global Privatization, Public/Private Network.

He has a B.B.A. from Wilfrid Laurier University, an M.B.A. with honours from York University, and over twenty years' experience with KPMG. He is a member of the Planning Forum, the American Marketing Association, and an associate member of the Transportation Research Board (U.S. National Academy of Sciences). He co-chairs the KPMG National Public Private Network.

Consulting Experience

Transportation

- **Texas Highways Program**—KPMG has been engaged as a Financial Advisor to TxDOT on procurement strategies and implementation plans for its statewide comprehensive development agreement (design-build, PPPs and franchises/concession) program, which TxDOT anticipates utilizing to help finance many of its new turnpike projects over the next several years. Mr. Beatty's responsibilities have included assistance in developing and implementing transaction strategies, assisting with evaluation of qualifications submittals and responses, coordinating with engineering consultants and internal staff, negotiating with proposers, analyzing financing options, assisting with federal SEP-15 approvals, advising on commercial terms, providing CDA training seminars, and a host of other activities.

In addition, KPMG is assessing financing requirements on a project-by-project basis, analyzing project revenues, investigating other potential revenue sources, and creating strategies for financing each of the individual CDA projects. KPMG is also assisting TxDOT with its applications for TIFIA and PABs for several of the CDA projects. KPMG's involvement spans the entire CDA program.

Mr. Beatty is providing overall client quality assurance and strategic advice on the TxDOT program. This work has included developing programmatic views on dealing with specific issues on the various projects, as well as addressing specific project-level issues. These issues range from business planning, procurement options, providing financial and structuring advice, payment mechanisms and key inputs into the development of financial models. The various projects in which Steve is involved include:

- Assisting TxDOT in working with Cintra-Zachry in the development of a Master Financial Plan for the TTC-35, crossing the State and connecting the Oklahoma border with Mexico.
- Advising in the direct negotiations with Cintra-Zachry for Segments 5 & 6 of SH 130, near Austin.
- Dallas-based projects including the SH 121, IH 635, SH 161, North Tarrant Express, and the soon-to-be released DFW Connector.
- The Loop 1604/SR 281 project in San Antonio.
- The recently released TTC-69 project, connecting Louisiana with Mexico.

- Assessing the PPP potential of several other unfunded projects and creating a framework for "triaging" unsolicited proposals.
- **Ontario Privatization Secretariat—Advisor for the Highway 407 Divestiture.** Mr. Beatty was a principal advisor to the Ontario Privatization Secretariat in the successful \$3.1 billion divestiture of Highway 407, the world's first electronically tolled highway. This transaction is the largest transaction affected by the Province of Ontario to date and was completed in less than nine months. KPMG's extensive involvement included roles as the overall business advisor, transaction process advisor, the transportation advisor, and the accounting advisor.
 - Mr. Beatty, as the transaction process advisor, assisted the Province in the design and execution of the process and provided project management support to ensure that the divestiture process followed was fair, transparent, and defensible. KPMG also served as the interim manager of the facility.
 - In the role of transportation advisor, KPMG provided advice on traffic forecasting, economic regulation, and other matters. One of the key elements of KPMG's work was the design of the toll rate regulation regime to be used by the winning bidder.
 - As an accounting advisor, Mr. Beatty assisted in analyzing various transaction structures, performed due diligence on financial and operating information, and advised on various components of the financial model.
 - Mr. Beatty also worked to assist the Province in the transfer of ownership from the Province to the private sector. These responsibilities included assisting the Province in ensuring all obligations under various agreements with the private sector had been met, assisting the Province in identifying government sensitive documents, and identifying and quantifying outstanding liabilities. Specifically, KPMG assisted with the development of protocols to deal with various contractual, safety, and other issues over concession term, advising the Province on its business relationships with the purchaser through participation in regular management meetings, and devising an approach to perform an audit of compliance with the agreements.
- **Ontario Ministry of Transportation—Highway 407 Regulatory Advice.** Mr. Beatty is a member of the KPMG team that is providing ongoing assistance to the Ontario Ministry of Transportation in its administration of the 99-year concession for Highway 407. The primary focus of the work involves assistance with the regulatory framework which was developed as part of the privatization of the Highway.
- **Indiana Department of Transportation I-69 Corridor.** KPMG was mandated by INDOT to perform a financial feasibility study on the I-69 as a requirement of Indiana's legislation that determined a financial feasibility study must be performed by a firm internationally recognized in the field of such studies. KPMG, along with a team of technical and legal advisors, were mandated to perform the study. Steve has the overall responsibility and is a key strategic advisor to the Indiana Department of Transportation regarding the development of the I-69 corridor in the State under a concession model. I-69 has been identified as a major initiative of the federal highways

administration that is currently being pursued by six States. Steve is advising the only two States (Texas and Indiana) that are at the forefront of delivering their segments of the I-69 and will soon be taking the transactions to market.

- **Irish National Roads Authority—Public-Private Partnership Assistance.** Mr. Beatty was a member of a large KPMG team that provided assistance to the Irish National Roads Authority in the structuring and tendering of ten design-build-finance-operate road projects in Ireland. Mr. Beatty's primary focus was on the tolling of the facilities and different methods of achieving financial self-sufficiency in a number of projects.
- **Riverside County Transportation Commission - Development of PPP Highways.** KPMG was recently appointed as Financial Advisors to Riverside County Transportation Commission regarding the potential development of several billion dollars of highway improvements in the County. The current work is focused on financial analysis of the various projects, with assessment as to their suitability for development under a PPP approach. Mr. Beatty is involved in this project and has been assisting the client in addressing a range of strategic and policy matters to date.
- **Minnesota Department of Transportation—MN Pass.** Mr. Beatty was responsible for KPMG's assistance to the Minnesota Department of Transportation in assessing the potential for the implementation of the MN Pass System involving a public-private partnership to implement HOV/HOT lanes in Minneapolis.
- **Greater Vancouver Transportation Authority/Translink—Golden Ears Bridge.** Mr. Beatty was a member of KPMG's team providing assistance to Translink in its public private partnership for the design, construction, financing and operation of the Golden Ears Bridge.
- **Greater Vancouver Transportation Authority/Translink—RAV Project.** Mr. Beatty was a member of KPMG's team that provided expert peer review services to Translink in its implementation of the Richmond Airport Vancouver Rail Link.
- **Metro Toronto Roads—Operations Centre Privatization.** Mr. Beatty provided assistance in the negotiations surrounding the potential privatization of the Metro Toronto Traffic Operations Centre.
- **Canadian Highways Constructor—Review of Toll Road Opportunity in Guilin, China.** Mr. Beatty undertook a preliminary feasibility review and negotiations regarding a toll road project in Guilin, China. The work examined the potential to develop a highway under a Build-Operate-Transfer approach.

- **Ministry of Transportation of Ontario—Independent Process Review of Five Design/Build Competitions.** Mr. Beatty was involved in assisting the Ministry in the selection process for design/build highway projects in the following five regions:

- North-western
- Northern
- South-western
- Eastern
- Central

The focus of the engagement was on ensuring that the selection process was fair and credible. Upon completion of the selection process, KPMG reported on the integrity of the process.

- **Confederation Bridge—Toll Revenue Forecasts.** Mr. Beatty was responsible for a series of analyses that led to the development of comprehensive traffic and revenue estimates for the owners of Confederation Bridge which links the Canadian Provinces of New Brunswick and Prince Edward Island. The traffic forecasts were used in conjunction with raising of non-recourse debt for the project.
- **Ontario Ministry of Transportation—Logo Signs.** Mr. Beatty led the KPMG team that provided assistance to the Ontario Ministry of Transportation in the establishment of a public-private partnership for the procurement of logo signs on Ontario's major highways. The work involved the establishment of a concession framework as well as the offering of the business opportunity to the private sector.
- **Governments of North Dakota, Manitoba and Saskatchewan—Border Crossing.** Mr. Beatty was a member of a KPMG team that provided assistance to the Governments of North Dakota, Manitoba and Saskatchewan regarding two major rail border crossings between Canada and the United States. The work examined the potential to accelerate customs clearance at the border and recover the costs from users.
- **BC Ministry of Transportation—Sea to Sky Highway.** Working for the British Columbia Ministry of Transportation (MoT), KPMG analyzed the potential to successfully implement, using a public-private partnership, a long-term business arrangement for the operation, maintenance, and upgrading of Sea to Sky Highway. This project included various aspects, such as issues analysis, business case development and options analysis, project planning, analyzing and determining the optimal business model and deal structure, communicating and marketing the deal, creating an interim operating entity, developing a concession agreement, evaluating bids, completing the final transaction, and operational transitioning. Mr. Beatty was the lead advisor on the \$1 billion-plus project, and was key in developing a full understanding of all the relevant issues, in order to determine if there was a business case that could support a P3 structure.

- **BC Ministry of Transportation—Coquihalla Highway.** For the BC Ministry of Transportation, KPMG was retained as the business advisor in the privatization of the Coquihalla Highway. The Coquihalla Highway is the only toll highway in B.C. KPMG's role included assisting in the structuring of the transaction, addressing key transaction parameters, developing the tolling regime, developing the business case, and assisting with the transaction process. Mr. Beatty was the client service partner on this assignment, advising on key transaction parameters and ensuring that the objectives of the transaction were consistent with other road privatization transactions within the Province.

- **Municipality of Metro Toronto—Acquisition of a Parking Tag Management System.** Mr. Beatty assisted staff of Metro Toronto in the acquisition of a new parking tag management system, assisted in drafting the Request for Expressions of Interest, the shortlisting of the proponents, the drafting of the Request for Proposals and the evaluation of the final proposals. The process involved consideration of both an in-house procurement of the system as well as a privatization of the parking tag office. In parallel, the process also solicited proposals for upgrades to a police management system. Mr. Beatty assisted Metro in the negotiations with the selected proponents.

- **BC Ministry of Transportation—Gateway Program.** KPMG is currently acting as the Business Advisor to the Gateway Program. Mr. Beatty is the Senior Advisor for this engagement, providing strategic and procurement advice, including due diligence, risk assessments, tolling policies and evaluation criteria development. The Province of British Columbia, together with the Greater Vancouver Transportation Authority have undertaken a program of infrastructure improvements, whose objectives are to improve access along and across the Fraser River corridor, improve access to major gateways, promote industrial development, and address current congestion issues. The program is comprised of three primary corridors:
 - Twinning of the Port Mann Bridge and improvements to Highway 1, including widening of the motorway
 - South Fraser Perimeter Road - A proposed transportation corridor running along the south side of the Fraser River (from Highway 91 to Highways 1 and 15). This project would provide the linking of docks, rail facilities, and industrial areas with the Provincial highway system.
 - North Fraser Perimeter Road - improvements and additional connections within the existing road network, combined with improvements to the Pitt River Bridge and Lougheed Highway

Currently, the program is at the pre-Request for Qualifications (RFQ) stage on the Highway 1/Port Mann Bridge project.

- **British Columbia Transportation Financing Authority—Sierra-Yo-Yo-Desan Road Project.** Mr. Beatty assisted the B.C. Transportation Financing Authority in securing a developer/financier of this major natural resource access roadway in Central British Columbia.

- **Province of British Columbia—Lion's Gate Bridge.** Mr. Beatty served as one of the principal advisors to the Province of British Columbia in implementing the repair/rehabilitation/replacement of the Lion's Gate Crossing. Mr. Beatty's work involves assistance in obtaining government acceptance and approval of the project, as well as structuring the transaction to maximize the net benefits.
- **Province of New Brunswick—Procurement Process Review Advisor.** Mr. Beatty served as one of the principal advisors to the Province of New Brunswick regarding the construction of a highway between Fredericton and Moncton. The project, with a value in excess of \$650 million, was undertaken as a public-private partnership between the Government of the Province and a private partner. Mr. Beatty's role involved the provision of expert advice to senior officials in the Ministry of Transportation, the Ministry of Finance and the Ministry of the Attorney General.
- **B.C. Ministry of Transportation and Highways.** Mr. Beatty advised the B.C. Ministry of Transportation and Highways in the development of two design/build highway projects in Vancouver. The projects involved complex design/build challenges on both traffic management and environmental fronts. The KPMG assistance involved the development of a comprehensive approach to project definition, to contractor selection, and negotiations.
- **The City of Mississauga Bus Shelter—Public-Private Partnership.** Mr. Beatty was a member of a KPMG team that provided a range of assistance regarding a public-private partnership for the provision of transit shelters for the City of Mississauga.

Airports and Aviation

- **Joint U.S.-Dutch Developer—Redevelopment of Terminal Building at JFK International Airport.** Mr. Beatty assisted in a joint venture between a U.S. developer and a Dutch airport operations company in the redevelopment of the International Arrivals Building at JFK International Airport. The focus of his work was on conducting due diligence on the financial information that was provided to the proponents in this competition by the Port Authority of New York & New Jersey.
- **Air Terminals Development Group—Terminal One/Two Redevelopment Proposal.** Mr. Beatty provided extensive assistance to the Air Terminals Development Group in the submission of their proposal to redevelop Terminals One and Two at Lester B. Pearson International Airport. The Air Terminals Development Group is owned principally by the Charles R. Bronfman Family Trusts and the Lockheed Corporation. Mr. Beatty was responsible for the development of a comprehensive plan to transfer the assets, employees, and business obligations of Transport Canada to the Air Terminals Development Group. He had a significant involvement in the development of the business plan for the project, and directed the production of the management and operations elements of the proposals.
- **Ogden Aviation—Proposal to Modernize and Expand International Terminal Facilities at the Luis Munoz Marin International Airport in San Juan, Puerto Rico.** KPMG assisted this

client in the preparation of a submission in response to the Puerto Rico Ports Authority's Request for Proposal for the development of the above-noted facilities. Mr. Beatty assessed the operational characteristics and financial performance of the airport. Mr. Beatty was also responsible for the development of financial projections and business plan for the project. A key element of KPMG's work was the formulation of the most appropriate form of public-private partnership. Issues considered included rate setting mechanism, cost minimization, and management and control.

- **Private Sector Consortium—New Runway at El Dorado Airport in Bogota.** For a joint US-Spanish consortium, Mr. Beatty assisted in the development of a proposal to build a new runway at the airport in Bogota, Colombia and operate the airport's airside for 20 years. KPMG was responsible for the business plan and the management operations plan and, as part of this work, developed a detailed operating budgets for the project using experiences gained elsewhere and a limited amount of information made available to the bidders. Recently, the Colombian authorities announced that our client's submission was successful.
- **Airport Development Corporation—Operations Assistance.** Mr. Beatty provided assistance to the senior management and ownership of Terminal Three in Toronto in monitoring and analyzing cost and revenue data. Another aspect of the work involved assessing the accuracy of and curing deficiencies in data supplied by tenant airlines. These data are fundamental inputs used in a complex cost-sharing lease agreement between ADC and its airline tenants.
- **Canadian Developer—Privatization of Trinidad Airport.** Mr. Beatty participated in the development of a comprehensive proposal to privately develop new passenger terminal facilities at the Airport. The analysis focused on both the financial offer and the physical requirements of the facility.
- **Canadian Developer—Vietnam Airports.** Mr. Beatty participated in the analysis of the privatization potential of two Vietnamese airports on behalf of a Canadian developer. The work involved an analysis of local and international travel and the physical requirements of the proposed development.
- **Canadian Developer—Privatization of Runways.** Mr. Beatty participated in this engagement involving assistance provided to a Canadian developer proposing to privately develop runway facilities at Lester B. Pearson International Airport. The focus of the work was on the development of a comprehensive financial model and regulatory structure to govern the business relationship between the Government and the developer.
- **U.S. Aviation Company—Proposal to Privatize and Redevelop the Terminal Operations at Trinidad and Tobago's Piarco and Crown Point Airports.** KPMG was retained by a U.S.-based aviation company to undertake the financial analysis and modeling required to determine the feasibility and financial structure of this U.S. \$70 Million project. Mr. Beatty was the leader of the due diligence and negotiating team. The project encompasses the construction of a new terminal and the transfer of operations of existing facilities at the airports of Trinidad and Tobago.

Mr. Beatty reviewed traffic patterns at the airports and prepared a comparison of airport fees and charges at neighbouring international airports.

- **Italian-Thai Development Public Co.—Proposal to Build and Operate the Clark International Airport in the Philippines.** Mr. Beatty was a member of the consulting team that assisted this client in the preparation of a major submission to the government for the redevelopment of the former Clark Air Force Base in Manila, Philippines. The work included the development of traffic forecasts, translation of the traffic forecasts into facility requirements, projection of revenues and operating expenses, development of a financing strategy, and the preparation of the business plan. In addition, KPMG participated in the preparation of an economic benefit and cost analysis for the project.
 - **Panama Airport Proposal.** Mr. Beatty led a large KPMG team that provided assistance to Fraport in the analysis of the preparation of an offer to acquire the Panama City Airport.
 - **Basque Government—Airport Privatization.** On behalf of the Basque Government, Mr. Beatty examined the financial and economic feasibility of the privatization of the three major airports in the Basque Region of Spain. The work involved an examination of the financial and operational performance of each of the airports as well as a broad assessment of their future potential.
 - **Government of Poland—Airport Privatization/Financing.** Mr. Beatty led a KPMG team which examined the potential for the Warsaw Airport to undertake the development of a new passenger terminal either on a project finance or privatized basis. The work involved an examination of a financial and operational details of the existing airport, together with an examination of capital market conditions in Poland and for Polish projects in Europe.
 - **Baltic Republic—Privatization Analysis.** On behalf of an Austrian company, Mr. Beatty examined the potential for privatization of a number of facilities in this Baltic Republic. The analysis focused on public infrastructure and housing, and resulted in the identification of several opportunities for future development.
 - **Russian Republic—Privatization Analysis.** Mr. Beatty examined the potential to privatize a semi-autonomous Republic's primary airport and other related infrastructure. The conclusion of the work was that substantial other infrastructure investment was required before the airport could be redeveloped using private finance.
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- **Ontario Ministry of Health and Long Term Care—CT Scan/MRI Public Private Partnership.** Mr. Beatty was responsible for KPMG's assistance to the Ontario Ministry of

Health and Long Term Care involving the operation of a large number of medical diagnostic imaging facilities, financed and operated on a public-private partnership basis.

- **Sunnybrook and Women's College Hospital.** Mr. Beatty led KPMG's team assessing the potential to develop a major research facility at Sunnybrook Hospital in Toronto utilizing a public-private partnership approach.
- **University Health Network—Sports Medicine.** Mr. Beatty directed KPMG's work in examining the potential to implement a major sports medicine facility at Toronto's University Health Network involving a public-private partnership approach.
- **Urban Shared Services Corporation—Hospital Food Preparation Facilities.** Mr. Beatty was a member of the KPMG team that assisted Winnipeg's Urban Shared Services Corporation in the selection of a preferred private sector partner to implement a comprehensive food services management system for a number of Winnipeg health care facilities.
- **Ontario SuperBuild Corporation—Ontario Hospital Association Health Care Public-Private Partnership Workshop.** Mr. Beatty conducted a workshop on behalf of the Ontario SuperBuild Corporation for the Ontario Hospital Association in the field of health care public-private partnerships. The workshop canvassed a range of experiences relating to public-private partnerships from both the public sector perspective as well as the private-sector perspective.

Water/Wastewater

- **Regional Municipality of Halton—Development of Corporate Policy/Proposal Call for New Water and Wastewater Facilities.** KPMG, in conjunction with Borden and Elliot, conducted an assignment for the Regional Municipality of Halton which had two components:
 - the development of a corporate policy on public/private partnerships,
 - the conduct of a proposal call process to develop new required water and wastewater treatment facilities.

Mr. Beatty was the co-partner in charge of this major assignment and thereby became familiar with the latest issues that needed to be addressed in operating and maintaining a water system.

- **Private Sector Developer—York Region Water Public/Private Partnership.** Mr. Beatty served as the principal financial advisor to a consortium who submitted a proposal to York Region to become its partner in the provision of water to the Region. This consortium is lead by Union Gas, The Ogden Corporation, and Yorkshire Water PLC. Focus of the work was the preparation of a proposal and the structuring of the partnership relationship in a manner that provides high-quality services at reasonable prices while earning fair returns for the participants.
- **The Regional Municipality of Hamilton-Wentworth—Public/Private Partnership Negotiations.** Philip Environmental, an environmental services company based in Hamilton,

made an unsolicited proposal to the Regional Municipality of Hamilton-Wentworth to manage and operate the Region's water and wastewater treatment facilities. In return, Philip proposed to guarantee a minimum annual savings in operating costs for the Region. Philip also made certain assertions regarding the economic development benefits that the Region could gain from providing the private operator with a base of operations from which to pursue work outside of the Region. KPMG was retained by the Region, where Mr. Beatty assisted staff in negotiating a contract with Philip. The scope of the contract covered the operating standards to be followed by Philip, maintenance procedures and standards, transfer of employees from the Region to Philip, economic development guarantees and the financial arrangements between the two parties.

- **Greater Vancouver Regional District—Water and Wastewater Privatization.** KPMG, together with RPA Consultants, conducted a detailed examination of the potential for public/private partnerships in the water and waste water treatment field for the Greater Vancouver Regional District. Mr. Beatty's work examined likely candidates for public/private partnerships and assessed their potential for success. Three projects were reviewed in detail and it has been recommended two projects proceed for implementation on a public/private basis
- **Major Water/Wastewater Treatment Provider.** Mr. Beatty provided assistance to a major water/wastewater treatment company in the preparation and submission of a bid for a major public-private partnership contract. The work involved a detailed assessment of the risks of the contract from both the public and private sector perspectives. KPMG's work formed an input into the ultimate pricing decision.

PPP Advisory and Policy

- **Government of the Northwest Territories—Public-Private Partnership Evaluation.** Mr. Beatty was a member of the KPMG team that conducted a comprehensive evaluation of the Government of the Northwest Territories Public-Private Partnership Pilot Program. The work examined both the financial and public policy effectiveness of the program, as well as a range of implementation details.
- **Ontario SuperBuild Corporation—Infrastructure Workshop.** Mr. Beatty conducted a workshop on behalf of the Ontario SuperBuild Corporation in the field of public-private partnerships. The workshop canvassed a range of experiences relating to public-private partnerships from both the public sector perspective as well as the private-sector perspective.
- **Transport Canada/Provincial Transport Ministries—Public-Private Partnership "How-To Guide".** Mr. Beatty was a key member of a KPMG/Goodman's team that prepared a comprehensive "How-To Guide" for public-private partnerships in transportation projects. The work was undertaken on behalf of Transport Canada and the ten Ministries of Transport across Canada.

- **Government of Saskatchewan—Public-Private Partnership Assistance.** Mr. Beatty was a member of a KPMG team that provided assistance to the Crown Investments Corporation of Saskatchewan regarding potential public-private partnerships in the Province.
- **Arab Republic—Public-Private Joint Venture Planning.** Mr. Beatty assisted professionals from Marshall Macklin Monaghan Limited in the development of a methodology to find a joint venture partner for the government in the development of a major new urban industrial complex in this Arab Republic. This brief assignment focused on alternative methods for attracting "partners" and alternative development strategies.

Other Infrastructure Privatization

- **Metro Toronto Laundry Facilities.** Mr. Beatty was a member of a KPMG team that examined the ongoing advisability of a public-private partnership between a private contractor and the Municipality of Metropolitan Toronto in respect of the provision of laundry facilities for the Metro Homes for the Aged.
- **City of Mississauga—Spectator Arena Development.** Mr. Beatty provided assistance to the City of Mississauga in its search for a private developer to build, operate and finance a major spectator arena complex in the City of Mississauga. The work involved the conduct of a proposal call process as well as significant detailed negotiations. The project, using private financing, was ultimately discontinued because an appropriate risk-sharing mechanism could not be achieved.
- **District of Muskoka—Seniors' Housing.** Mr. Beatty had overall partnership responsibility for KPMG's assistance in the privatization of the operation of The Pines Long-Term Care Facility in Bracebridge. The work involved an analysis of existing operations, the conduct of a proposal call process and ultimately, negotiations with a preferred proponent.
- **The City of Surrey—Fleetwood Recreation Complex.** Mr. Beatty provided assistance to the City of Surrey in its search for a private developer to design, build, finance and operate the Fleetwood Sports and Recreation Complex. The work involved conduct of a proposal call process and negotiations with a preferred proponent.
- **Metro Separate School Board—St. Basil's School.** Mr. Beatty led KPMG's assistance to the School Board in finding new ways that the Board's investment dollars could be better leveraged into providing more and better facilities; lower overall cost to the Board; and better service and amenities for the local community.
- **Ontario Ministry of Correctional Services—Correctional Facilities Public-Private Partnership.** Mr. Beatty was responsible for KPMG's assistance to the Ministry of Correctional Services in attempting to implement a new correctional facility utilizing a public-private partnership approach.

- **Canadian Department of Foreign Affairs and International Trade—Berlin Embassy.** Mr. Beatty was responsible for KPMG's assistance to DFAIT in undertaking a public-private partnership for the construction of a new Canadian Embassy in Berlin. The project involved a combination of government facilities as well as commercial development. Complex inter-creditor and inter-tenant arrangements were put in place in order to effectively secure the new Embassy tenancy.

- **World Bank—Natural Gas System Privatization.** Mr. Beatty had overall partnership responsibility for KPMG's assistance provided in joint venture with Consumers Gas Company developing a strategy for the privatization of the natural gas distribution utility in Bursa, Turkey. The work involved an examination of the regulatory issues, physical planning, as well as the development of proposal call documents.

Will Lipson, Expert Witness

Managing Director, Global Infrastructure and Projects Group (GIPG), KPMG LLP

Qualifications

- B.Sc. Computer Science, University of Toronto
- M.B.A., University of Western Ontario
- Member of the Institute of Certified Management Consultants of Canada
- Corporate Finance designation from the Canadian Institute of Chartered Accountants

Background

Will Lipson is a Managing Director in KPMG's Global Infrastructure and Projects Group, specializing in assisting public agencies with planning and delivering large infrastructure projects. He has spent his 30 years career with KPMG largely dedicated to assisting public sector clients in a variety of matters. Will has expertise in project management, program evaluation, corporate planning and operations, public-private partnerships, financial and economic analysis, and demand forecasting. He is well known by government agencies across North America, and has been qualified as an expert witness on a number of occasions during the course of his career.

Experience and Expertise

- Enbridge — Expert Witness: Financial Feasibility Tests. This engagement consisted of a review of the financial tests used by a local natural gas distributor. The tests are used to determine the financial feasibility of expansion of the gas distribution system to new residential, commercial and industrial customers. Mr. Lipson primarily carried out this review, and focused his attention to the treatment of inflation, phasing assumptions, and time horizons. Following this engagement, Mr. Lipson acted as an expert witness testifying on the utility's financial feasibility tests in a regulatory hearing.
- Industry Canada—Financial Analysis. In this engagement, Mr. Lipson assisted Industry Canada in its evaluation of a large number of grant applicants on a variety of projects. Mr. Lipson initially assisted the Department in the financial and cost/benefit evaluation of a major project in Quebec; he subsequently played a major role in the development of a general process to be used in major future grant applications. Mr. Lipson subsequently assisted in its use of the model to assess several other projects, covering several hundreds of millions of dollars.
- Saskatchewan Crown Management Board—Review of Financial Model. Mr. Lipson assisted the Crown Management Board in its assessment of a major investment project. His assistance including reviewing the financial model developed for the project, verifying its accuracy, assessing and interpreting the results of the model, recommending a course of action for modeling future projects, and suggesting improved procedures and standards to be used in connection with the model
- Toronto Economic Development Corporation (TEDCO)—Arbitration Assistance. Mr. Lipson acted as an expert witness on behalf of TEDCO in an arbitration process pertaining to the payments for the transfer of lands from the Toronto Harbour Commissioners to TEDCO. The agreement between the THC and TEDCO involved the establishment of the annual payment to be made by TEDCO to the THC through the conduct of a study by an independent consultant. Mr.

Lipson was hired by TEDCO to review the study carried out by the independent consultant and examine whether the methodologies and approaches used were appropriate.

- Department of Energy, Mines and Resources—Evaluation of CHIP Program. Mr. Lipson assisted in the evaluation of the effectiveness of the Canadian Home Insulation Program. His analysis involved the use of advanced statistical techniques, such as logic analysis, factor analysis, and regression in an effort to build a path model of the consumer's decision to insulate and of how much to spend on insulation.
- Department of Public Works—Solar Energy Feasibility Model. Mr. Lipson developed a financial model to examine the feasibility of converting conventional energy applications into solar energy applications. The model had to be able to handle systems classified by technology, application, geographic region (e.g., province), starting date, type of application (residential, commercial, industrial), and conventional energy alternatives.
- Department of Energy, Mines and Resources—Program Evaluation of CCA Class 34. Mr. Lipson worked on a study to evaluate CCA Class 34, which allowed accelerated depreciation for a range of energy-conserving and renewable energy-generating equipment. Mr. Lipson was responsible for exploring the decision-making processes of companies who have utilized Class 34, and developing financial models of each of the case study projects. He was also had for developing an extrapolation algorithm to estimate the incrementality of the non-case study projects and a cost-benefit analysis of the program from both a government and social perspective.
- Department of Energy, Mines and Resources—Economic Impacts of Energy Management Investments. This study assessed the economic impacts generated in Canada by investments designed to reduce the demand for energy (e.g., insulation). The work involved an extensive series of interviews with manufacturers and installers of energy management products to estimate the size of the market and the impacts required to produce the products. The Statistics Canada input-output model was used to estimate indirect impacts and the results were included in a user-friendly computerized model which will be used for future policy analysis.
- Department of Energy, Mines and Resources—Evaluation of COSP. In this evaluation, Mr. Lipson was responsible for the financial analyses which were used to assess incrementality of this major government program to fund conversions from oil furnaces to other types of furnaces. His specific responsibilities included designing a major portion of a detailed telephone questionnaire used for the survey of 1,200 homeowners, conducting a number of policy interviews within the government, developing financial models to explain homeowner decision-making, conducting a cost-benefit analysis of the program, and interviewing a number of furnace manufacturers and installers to develop the input data to estimate the economic impacts of the program.
- Toronto Waterfront Revitalization Corporation—Business Plan for Waterfront Redevelopment. Mr. Lipson led the efforts of a group of planners, engineers, financial and legal advisors to write a business plan for the \$12 billion redevelopment of Toronto's waterfront. Mr. Lipson's role included managing the process so that all parties worked with a consistent set of parameters and assumptions. He was also responsible for providing solutions to address the revenue shortfall with innovative financing or private-sector involvement. A unique challenge in this project is the coordination with municipal, provincial and federal government, who were all involved in this significant redevelopment project.
- Ontario Northland Transportation Commission. Mr. Lipson was a lead advisor assisting this crown agency of the Province of Ontario to develop and implement a divestiture strategy for its major operating divisions. Separate selection processes were undertaken for the telecommunications division (which provides services throughout a 200,000 square mile area in northeastern Ontario) and the rail divisions (which provide freight, passenger and excursion services throughout a 700-mile railway network). He also assisted management with the preparation of current business plans, drafted divestiture documents for the telecommunications division and rail divisions, and marketed the transaction to potential bidders across North America.

- NAV CANADA—Strategic Planning Assistance. Mr. Lipson assisted NAV CANADA, operator of Canada's air navigation system, in the planning and implementation of various strategic initiatives including cost reduction, management streamlining and development of technology. Mr. Lipson was responsible for development of an analytical framework for the initiatives, management of the data collection and review process, construction of the model to assess the financial impacts, presentation of the strategic initiatives for approval, and the incorporation of the strategic initiatives into the corporate plan. The scope of the work addressed the full set of functions, services, and activities performed by the organization.
- Province of British Columbia—Assessment of Financial Status of Provincial Government. KPMG conducted a major review of the operations of the Province of British Columbia after a change of governments. As part of this review, Mr. Lipson conducted a detailed assessment of the British Columbia Buildings Corporation (BCBC). BCBC is the sole provider of accommodation and property management services to the Ministries of the Provincial Government. Mr. Lipson's review covered every organizational, financial and marketing dimension of BCBC.

Anurag Gupta, Senior Manager
Director, Global Infrastructure and Projects Group
KPMG LLP, Toronto, Canada

- Master of Business Administration, Tulane University, New Orleans
- Bachelors in Mechanical Engineering, Engineering Council, UK
- Bachelor of Science, Calcutta University, India

Anurag has over 10 years combined experience in project and corporate finance with extensive experience in structuring projects and complex transactions in the energy and infrastructure development sectors including experience with public-private partnership (P3 or PPP) models. Prior to KPMG, Anurag was a founding member of the Project Finance group at Infrastructure Ontario (IO), a Crown agency dedicated to delivering major (>\$100MM) public infrastructure projects. Anurag has significant experience in the energy sector having worked at Ontario Power Generation in Toronto and TXU Energy in Dallas in a variety of roles such as trading, structured transactions, quantitative analysis and credit risk.

Anurag has played leading roles in procuring, developing and financing projects in the social infrastructure and energy sectors. Specific energy sector experience includes:

- **Confidential Wind project—Negotiations Assistance** – Recently advised a large municipality in Western Canada negotiate for the purchase of green power from a wind-project developer under a 20-year contract. As part of the KPMG team, provided advice on the business terms and conditions and completed financial and business due diligence into the proposed pricing parameters.
- **Confidential Wind project - Financial Review** – Advised a leading western Canadian power producer conduct an in-depth financial review of a major wind power project for a possible divestiture. Advisory mandate included an independent valuation of the project and providing structuring advice on the proposed off-take agreement.
- **SaskPower, Regina** – Currently assisting SaskPower in their competitive procurements for peaking generation projects sized up to 100 megawatts (MW) to be in-service by December 2011 and for base load generation projects sized between 200 MW and 400 MW to be in-service by December 2012. Anurag is a member of the evaluation committee, provides advice and input on the development of the Request for Proposals (RFP) document and Power Purchase Agreement (PPA), especially on the RFP financial evaluation criteria, PPA financing issues and financial close issues.
- **Hydroelectric Power Generation Capacity Augmentation, Niagara Tunnel Project, Ontario Power Generation, Toronto** – Evaluated this approx. \$1 billion project for commercial completeness and effective risk mitigation. Helped structure the forward starting interest rate swaps used in the financing package. Analyzed creditworthiness of and granted credit to OPG's counterparties on the project.
- **Ontario Power Authority's call for Renewable Energy** – Assessed OPG's response to the Ontario Power Authority's Request for Proposals for Renewable Energy by conducting an independent project evaluation and risk assessment.
- **Portlands Energy Centre, Ontario Power Generation and TransCanada Corp., Toronto** – Performed analysis of the economics of the proposed peaker power plant to be built as a joint-venture between TransCanada and Ontario Power Generation in Toronto Portland's. Analysis

needed to account specifically for the absence of adequate gas storage and the need to schedule gas on a day-ahead basis.

Hourly Ontario Energy Pricing Model, Ontario Power Generation – Developed and implemented tests to assess the logic and accuracy of Ontario Power Generation's system-wide power forward curve model. Stress tests were designed to take into account the generation stack, dispatch economics, import / export of power from adjacent power control areas and new build economics, including alternative / renewable energy economics.

- **TXU Corporation, Dallas, USA** – Worked in structured finance and trading at this leading merchant energy company with \$14 Billion in assets serving 2.6MM customers in the United States. Performed analysis and financial valuation of commercial deals, capital investment decisions, and asset sales & purchases. Structured complex financial and commodity transactions. Deals ranged in value from \$10MM to \$500MM (NPV)

Selected Transactions

- **Texas Utilities Fuel Company** – Participated in the \$500 million sale of the TXU Fuel Company gas pipeline system for a pre-tax gain of \$390 million. Anurag led the valuation exercise using complex options analysis techniques to model the full revenue potential of the asset. Anurag advised on various divestiture structures such as Master Limited Partnerships (MLP), participated in the road shows and was on the deal team that negotiated and closed the transaction. Sale of the TXU Fuel Company gas pipeline system for a pre-tax gain of \$390 million.
- **Green Mountain Energy's Wind Power Project** - Valued a proposed equity investment in Green Mountain Energy's Wind Power Project. Analyzed and modeled key project risks, such as a shortfall in output and Renewable Energy Credits using a Weibull distribution to model wind power generation, transmission constraints, liquidated damages, etc.
- **Wind Power Contract Restructuring (Confidential Assignment)** – Analyzed the contract structure, economics and operational data from an existing wind power purchase agreement that the company was seeking to restructure. Analyzed alternatives such as a buy-out of the wind project, equity stake, etc.
- **Comanche Peak Nuclear Plant** - Structuring of a \$104MM Nuclear Fuel Supply Agreement, reducing TXU's credit exposure and working capital requirements.
- **Tenaska Power Purchase Agreement** – Restructured a Power Purchase Contract with Tenaska to unlock \$13MM in value. Valued and monetized the in-the-money spread option embedded in the PPA and negotiated the split of the value with Tenaska.
- **Corporate Finance Support** – Modeled working capital requirements for the proposed Credit Suisse (CSFB) and TXU Energy Trading Joint Venture.
- **Transfer Pricing Strategy** – Analyzed and recommended a transfer pricing strategy for TXU's Generation, Wholesale Marketing and Retail Sales divisions. Competing incentives across the three divisions, portfolio optimization issues and trading proprietary versus hedging positions complicated the development of an optimized transfer pricing strategy.
- **Retail Marketing Strategy** - Contributed to developing TXU's retail marketing strategy for the small and medium business segment. Specifically analyzed the use of Third Party Marketing Channels, such as brokers, in expanding retail sales.

Enterprise Wide Risk Management - Reported directly to the Chief Risk Officer to develop a monthly enterprise-wide risk report for review by the Board of Directors. Analyzed financial statements and quantified the impact of adverse market/operating conditions on key financial ratios as part of the report.

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Mike Ross, C.M.C., Economist

Mr. Ross graduated from the University of Toronto with a B.Sc. in Mathematics (1968), and an M.A. in Economics (1971). He is a member of the Institute of Management Consultants of Ontario, Canadian Economics Association, American Economics Association, and the Toronto Association of Business Economists. He has over 27 years' experience with KPMG, and became a partner in 1982.

Mike has extensive experience in a wide variety of industries; working for both the public and private side of the transaction. Some of his most relevant experience is highlighted below:

- **Canada Mortgage and Housing Corporation — Residential Property Management Study.** Mr. Ross had overall responsibility for this two-phased study. The first phase developed a profile of the residential property management industry. The second phase identified information needs and research issues in the industry. The work was based on a combination of the analysis of detailed Statistics Canada survey data, and a wide ranging survey conducted by the consultants.
- **Thunder Bay Regional Hospital — Economic Impact of a New Acute Care Hospital.** Mr. Ross was responsible for this study to determine the economic impact of a proposed new acute care hospital in Thunder Bay, and to compare these impacts to the alternative of providing restructured hospital services through an old, existing facility. The analysis reviewed economic impacts in terms of a number of economic impact criteria, including community economic development, employment generation, economic diversification, and municipal finance.
- **Westnor Limited — Economic Impact Analysis.** For this client, Mr. Ross assessed the economic impacts associated with proceeding with the development of the Westnor site into a mixed-use development of office and condominium buildings. Elements of the work include analyzing the capital expenditure data and using the Statistics Canada Input-Output Model of the Canadian Economy to obtain estimates of value-added and employment generated.
- **Private Sector Developer — Resort Feasibility Study.** Mr. Ross undertook the financial analysis and financeability assessment components of a major study, to assess the feasibility of a proposed tourist attraction and hotel complex, to be developed in conjunction with a ski hill near Ingonish, Nova Scotia. KPMG worked in association with a large firm of recreational planners, and a specialized U.S.-based attractions consultant.
- **Region of Durham — Location of Headquarters.** Mr. Ross was the partner responsible for this study in which we analyzed the financial and planning merits of four alternatives for the provision of a Regional Headquarters building for the Region of Durham. The study involved reviewing the regional staff's analysis of the four alternatives and updating the information contained in the staff report. In addition, Mr. Ross examined the future impacts on municipal taxes of the various alternatives. The final report was presented to the regional council.
- **Canada Mortgage and Housing Corporation — Energy Efficiency in New Residential Housing.** On behalf of CMHC, Mr. Ross undertook a major study to identify impediments to the incorporation of energy-efficiency procedures in new housing in Canada. At the core of the study were tasks designed to develop an understanding of the economics of various energy-using appliances in the home, as well as an understanding of the decision-making processes employed by both consumers and developers/builders with respect to the incorporation of energy-saving features in new housing.

- **National Capital Commission — Real Estate Development.** Mr. Ross was responsible for this engagement to provide assistance to the National Capital Commission, who are offering sites in the Ottawa area to private sector developers. We assisted them to develop appropriate tender documents, and also provided assistance assessing and evaluating the financial aspects of the various development proposals received.
- **City of Ottawa — Bid Evaluation Assistance.** Mr. Ross was responsible for this project, in which KPMG was retained by the City of Ottawa to assist in the evaluation of proposals from real estate developers to provide parking facilities in exchange for the right to develop on city owned land.
- **City of North York — City Centre Development.** Mr. Ross undertook a study for the City of North York, to determine the fiscal impact of various development schemes associated with a new City Centre Development beside the existing City Hall. The study was developed to be used as evidence before the Ontario Municipal Board. In addition, Mr. Ross was responsible for a number of other small engagements to review and assess various development proposals and tenders associated with the project.
- **Schedule A Bank — Regional Office Location.** Mr. Ross undertook a study to assess the most appropriate location for a regional office of the retail banking operations of a major Canadian bank. Our approach combined internal interviewing, and the collection and analysis of external data.
- **Ontario Land Corporation — Housing Market Research.** Mr. Ross was responsible for the study of the market for residential housing in a medium-sized Eastern Ontario City. Work was conducted primarily by a review of existing market trends, and detailed interviews with planners, real estate professionals, and other developers in the area.
- **Private Sector Developer — Hotel Feasibility Study.** Mr. Ross was responsible for a hotel feasibility study, for a proposed site in the northeast section of Metro Toronto.
- **Prince Edward Island — Industrial Development Strategy.** Mr. Ross managed a study designed to evaluate the industrial development strategies currently in place in PEI, and to develop objectives and strategies for the next five years. The study included an assessment of government programs currently in place, with recommendations as to changes in their structure and implementation.
- **Urban Development Institute — Impact of Industrial Lot Levies.** On behalf of this real estate industry association, Mr. Ross prepared a report assessing the impact on municipal revenues, economic development, and other matters, of proposed changes in the structure of developer levies for industrial land in Ontario municipalities. The report was used by the industry association to support their submissions to municipal government. The report was subsequently updated and used again in a similar fashion.
- **Sydney, Nova Scotia — Industrial Park Feasibility.** Mr. Ross managed a study to assess the feasibility of developing an industrial park in Sydney. The study included an assessment of the supply and demand of industrial land, as well as a number of interviews with local citizens. With the assistance of an engineering sub-consultant, costs of alternative sites were assessed, and recommendations as to preferred sites were developed.
- **Private Developer — Management Review of Renovated Facility.** On behalf of a private sector client, Mr. Ross conducted a brief management review of a major renovation project in Eastern Canada. The review encompassed construction costs, financing, and plans for leasing the facility.

- **Private Developer — Municipal Financial Impact Assessment.** On behalf of a private developer, Mr. Ross managed a project to assess the financial impact of a proposed residential development on a town east of Toronto.
- **Wimpey — Municipal Financial Impact Assessment.** On behalf of this real estate developer, Mr. Ross managed a project to determine the financial impact of a proposed residential development on the existing taxpayers of a southern Ontario city. Mr. Ross presented the results of the work as evidence before the Ontario Municipal Board. He was subsequently retained to update the client's development strategy.
- **Private Developer — Opportunities for Residential Growth** Mr. Ross assisted a private sector client in the analysis of opportunities for residential growth in Oakville, a southern Ontario town. The analysis focused on the Toronto and Hamilton metropolitan areas, and was developed to be used as evidence before the Ontario Municipal Board.
- **Analysis of Serviced Land Prices.** KPMG assisted the large Canadian real estate development companies to prepare a submission to the Greenspan Task Force on serviced land prices. Mr. Ross conducted a number of interviews, supervised the statistical analysis of data for a large number of real estate projects, and played a major role in the presentation and explanation of the project results. Our work was incorporated directly into the technical appendices of the Task Force report.
- **Bruce County — Housing Policy Study.** Mr. Ross managed the activities of KPMG and another consulting firm on this project to develop a set of housing policies for Bruce County. The central tasks of the study were to assess the economic impact on the area of the Bruce Nuclear Power Development, and to translate this impact into housing requirements in both the short and medium term.
- **Markham — Retail Market Analysis.** Mr. Ross was the lead consultant for the assessment of the impact of a proposed major shopping centre on the shopping habits of area residents and associated impacts on local merchants. He evaluated the results of a telephone interview program, and analyzed current and expected shopping habits to produce estimates of shifts in patronage. The focus of the analysis was on the impact on existing local merchants.

Jonathan Erling, Engineer
Managing Director, Global Infrastructure and Projects Group,
KPMG LLP, Toronto, Canada

- Bachelor of Engineering Science (Mechanical Option), University of Western Ontario
- Master of Business Administration (Finance), University of Toronto
- Member of Professional Engineers Ontario

Jonathan Erling is a Managing Director in the Global Infrastructure and Projects Group practice of KPMG's Toronto office. He specializes in energy and utility economics, regulatory issues, statistics, and forecasting. He also provides financial modelling, cost allocation and strategic planning services for utility and public-sector clients.

His project experience covers the electricity, water and wastewater, and natural gas distribution sectors. Specific areas of focus include:

- Evaluation of future financial returns and complex financial modeling.
- Business case assessments for new infrastructure development.
- Cost allocation and rate design.
- Various forms of transaction support, including analysis of regulatory issues and energy pricing risks.

Assistance in negotiating long-term agreements for infrastructure development or for power purchase.

Hydro Electric Power Generation

- **Lenders to Abitibi-Bowater—Financial Assessment.** KPMG is providing a variety of financial advisory services to a group of lenders to Abitibi-Bowater during its current restructuring process. Jonathan is taking the lead in providing advice on the potential value of hydro-electric facilities owned by Abitibi in Ontario and Quebec. Issues addressed in our review include the status of water lease rights, the potential for the export of power, ongoing operating costs and requirements for refurbishment, uncertainty in future electricity market prices, and water flow variability.
- **Crown utility—Financial Feasibility.** KPMG helped a Crown utility assess the feasibility of building a new \$300 million hydro-electric dam using project financing. This merchant project would be built to support the operation of a number of mines in a remote northern location and electricity would be sold under long-term Power Purchase Agreements (PPAs).
- **Native Band—Negotiations Assistance.** KPMG was retained by this client to help it negotiate the terms and conditions of an ownership interest in a hydro-electric dam to be built by the provincial Crown utility in the province. In addition to preparing a detailed financial model and evaluating the appropriateness of expected financial returns, KPMG provided advice on a number of strategic issues associated with the project. We examined past and potential future trends in the pricing of energy commodities and drafted price-indexing provisions that would protect our client's interests. We also proposed an allocation of business risks for the project and assessed risks associated with the dispatch of the facility within an integrated river system.
- **Ontario Power Generation—Financial Review.** KPMG was retained by the Board of Directors of OPG to undertake a review of the variance between the company's actual and planned financial performance over the 5-year period from 1999 to 2003. Mr. Erling played a

major role in this assignment, and was responsible for validating OPG's methodology and findings with respect to price and volume variances. Mr. Erling also led the investigation of the impact that fuel price increases and changes in provincial water flows had on achieved net income.

- **Manitoba Hydro—Acquisition Review.** In pursuit of operating cost reductions, Manitoba Hydro purchased the gas distribution assets of privately-owned utility in the province. Combining electricity and natural gas activities was expected to lead to efficiency improvements. Manitoba Hydro retained KPMG to review the results of this acquisition, and to help assess whether forecast cost reductions had actually been achieved. Mr. Erling played a key role in this assignment and acted as an expert witness at the Manitoba Public Utilities Board (PUB).
- **Lakeland Power Group—Valuation of Hydroelectric Generating Assets.** On behalf of a group of utilities in Northern Ontario, KPMG projected financial returns for a hydro-electric plant owned by one of the group members. Our financial analysis was used to determine equity allocations for participants in an amalgamation transaction. Mr. Erling's analysis took into account uncertainty in future market prices for electricity, and annual variations in water flow and, hence, plant output. This project was done prior to opening of the Ontario electricity market, and we thus needed to develop forecasts of seasonal and hourly variation in Ontario electricity prices in the absence of actual market price data.
- **Private Utility—Quantification of Damages.** KPMG helped a private, vertically-integrated utility to quantify the economic loss associated with the implementation of a new electricity market structure in Ontario. As a result of market restructuring, the company's hydro-electric generating activities are now subject to competition and to spot price volatility. For the distribution component of the company's business, the move from a pure Rate of Return to a Performance-Based Regulatory regime (PBR) is causing a reduction in expected profits. KPMG quantified economic losses to support a legal claim. Our model took into account seasonal and annual variation in electricity flows, and the impact of this volatility on production from the company's fossil-fired generating facilities. Mr. Erling was the manager of this project.
- **Newfoundland and Labrador Hydro—Depreciation Study.** KPMG was retained by this utility to review its depreciation policies and to prepare a report for the province's Public Utilities Board. The utility is moving to a Rate of Return basis for tariff regulation. Mr. Erling was the principal researcher on this project. This study involved a survey of depreciation practices among utilities in North America, a review of the utility's future capital expansion plans, and analysis of the implications of different depreciation policies on the province's consumers.

Sector and Policy Analyses

- **Ontario Energy Board—Review of Asset Management Practices.** On behalf of the OEB, KPMG recently completed a major review of asset management practices in the Ontario electricity distribution sector. This study encompassed activities for inspection, maintenance and capital planning. The study included the development of a framework for evaluating decision-making approaches. It was based on field visits to a number of participating LDCs, a survey questionnaire, a review of practices in other jurisdictions, and a review of utility filings on the issue of asset management. Jonathan Erling was the principal author of this study.
- **Ministry of Environment—Financial Guidelines.** MOE retained KPMG to help prepare guidelines for the preparation of Financial Plans by municipal water and wastewater utilities. These plans will include Capital Investment Plans, which identify appropriate levels of capital

expenditure, and Funding Plans, which identify the approach used to raising the financial resources necessary. KPMG has played a key role in the development of these guidelines; this has included the preparation of detailed examples to illustrate a forward-looking approach to financial planning.

- **Ministry of Environment—Regulations for Full Cost Pricing.** KPMG has been retained by the Ministry of Environment in Ontario to develop the content of regulations for full-cost pricing in the water and wastewater sectors. Regulations will also define the content of cost recovery reports, which will ensure that full costs are collected from utility users. Charts of accounts and accounting procedures are also being developed during this engagement. Mr. Erling is the manager of this project.
- **SuperBuild Corporation—Privatization Strategy.** On behalf of SuperBuild, an agency of the Ontario government, KPMG analyzed the Business Models used in a variety of utility sectors. We then assessed the extent to which these models could be used in the delivery of water and wastewater services in Ontario. A major focus of the study was on regulatory mechanisms for price setting. The results of this study are being used by SuperBuild to develop a long-term water and sewer infrastructure investment and financing strategy. Jurisdictions analyzed include Ontario, U.K., Australia and the U.S. Mr. Erling was the Project Manager for this engagement.

Power Generation - Other

- **SaskPower—Procurement Assistance.** KPMG is currently assisting this client with the procurement of 100 MW of gas-fired peaking and 200 to 400 MW of gas-fired base-load generation capacity. KPMG helped in the evaluation of responses to a recent RFQ process and has provided advice on the drafting of a Request for Proposals document to be provided to short-listed proponents. KPMG has also been providing advice on the terms and conditions of the proposed Power Purchase Agreement (PPA). Mr. Erling is the Engagement Director for this project.
- **Wind project—Negotiations Assistance.** KPMG recently helped a large municipality in Western Canada negotiate for the purchase of green power from a wind-project developer under a 20-year contract. Mr. Erling played a key role in this assignment, and is providing advice on the business terms and conditions. He also helped to complete financial and business due diligence into the proposed pricing parameters.
- **Landfill gas project—Financial Evaluation.** On behalf of a large municipality, Mr. Erling prepared a financial and business case assessment of a proposed landfill gas project. This project was subsequently bid into the Ontario Power Authority's Renewables II procurement stream, and received a contract.
- **Bio-gas project—Financial Evaluation.** On behalf of a large municipality, Mr. Erling prepared a financial and business case assessment of a proposed project to use digester gas from a wastewater treatment plant in a cogeneration facility. This facility would generate both electricity and hot water for process purposes. This project subsequently received a contract with the Ontario Power Authority.
- **Landfill gas project—Negotiations Assistance.** Mr. Erling helped an Ontario municipality negotiate with a local utility for the development of a landfill gas generating plant on the municipality's landfill site. He helped to structure royalty payments for the methane gas produced at the landfill. These arrangements took into account municipal preferences with respect to the sharing of electricity pricing risk, the allocation of potential emissions credits, and the financing required for associated municipal infrastructure. This project subsequently received a contract with the Ontario Power Authority.

- **Wind farm—Business start-up advice.** KPMG provided business start-up advice to a private company looking to develop a series of wind farms in Ontario. Mr. Erling has helped this client prepare a spreadsheet-based financial model of the project. KPMG has also advised this client on alternative sources of financing, including flow-through share structures, and tax issues.
- **Ontario Energy Board—Regulatory Regime for Tax Compliance.** The OEB retained KPMG to review its policies and procedures with respect to electric utilities' recovery of corporate income taxes. Mr. Erling helped prepare worked examples of alternative regulatory treatments of tax expense. He also prepared an analysis that proved that there could be a disconnect between book depreciation expense and the allowances for depreciation expense that were implicit in the OEB's PBR methodology.
- **Ontario Power Generation—Review of Cogeneration Economics.** Over a two-year period, KPMG has completed five separate studies for Ontario Power Generation (OPG) to review the financial feasibility of cogeneration and combined-cycle generating units at industrial plants in the province. OPG required third-party confirmation of the economics of such projects before it could provide rate discounts to electricity customers who would otherwise begin to self-generate.

A key focus of the two most recent studies was the likely impact of the province's plan to deregulate the electricity generation sector and to unbundle electricity rates. Three projects involved cogeneration plants at major oil refineries. Two other projects were at pulp and paper mills in Northern Ontario. Mr. Erling acted as the principal researcher on all of these projects.
- **Integrated Energy Development Corporation—Development of Expert Testimony.** In support of this client's intervention at Ontario Energy Board Hearings, Mr. Erling critiqued Ontario Hydro's plans for incorporating sustainable development concerns in its planning process. Mr. Erling reviewed the consistency of economic development programs with proposals to integrate environmental externalities into costing methods. Mr. Erling also analyzed subsidies for energy efficiency programs and the impact of differences between rural and industrial rates.
- **Merchant Bank—Review of Electricity Cost Outlook.** KPMG provided due diligence assistance to a US merchant bank looking to invest in a major supplier of chemicals. Electricity costs represented over 50% of the variable cost of the company's product line. Mr. Erling assessed the company's procurement strategy for electricity and the outlook for electricity prices in the jurisdictions in which operated. We assessed the likely impact from utility restructuring in a number of the jurisdictions, which spanned both sides of the U.S.-Canada border. Mr. Erling highlighted a number of risks at some of the plants in question, as well as the potential for cogeneration at several of the other plants, which had ready access to a supply of low-cost fuel.
- **U.S. Generation Company—Acquisition Due Diligence.** KPMG provided due diligence assistance to this US utility considering the purchase of OPG generating assets. Mr. Erling assessed the business implications of long-term contracts for the supply and delivery of natural gas to the facilities concerned.
- **Independent Power Producer—Review of Business Planning Tools.** KPMG was retained by a major independent power producer in Ontario to review its business planning tools and approach to optimizing plant operations. Mr. Erling interviewed plant managers and reviewed in detail the company's contracts for the sale of power and for natural gas purchase and delivery. To respond to increased volatility in natural gas prices, Mr. Erling recommended the development of formal software tools to identify optimal operating strategies and to document and codify current business practices.

- **Toronto Waterfront Revitalization Corporation—Project Planning.** Mr. Erling has been providing a wide range of advice with respect to the implementation of a major new district energy system along the Toronto Waterfront. This project, which entails the supply of both heating and cooling services, will be developed using a Public-Private Partnership model. Mr. Erling's role has included the following:
 - Preparing a detailed financial model to assess the project's financial returns under a variety of scenarios, taking into account customer growth, demand levels, pricing strategies and alternative approaches to configuring physical plant.
 - Evaluating the business case for alternative energy supply options, including the use of small-scale cogeneration and supply of waste heat from the Portlands Generating Plant.
 - Developing a pricing structure and regulatory regime to protect the interests of building owners in the district.
 - Conducting a market sounding process with potential private-sector proponents, to assess developer response to alternative deal structures.
 - Participating in the development of a detailed development agreement to protect the interests of TWRC and its public stakeholders. This included provisions allowing for cogeneration, the purchase of thermal energy from outside suppliers, and the supply of energy and capacity to external customers.
 - Participating in the technical evaluation of responses to a Request for Qualifications process.
 - Assisting in the development of a procurement strategy for maximizing competitive tension in the procurement process.

Work on this project is ongoing.

- **District Cooling—Optimization of Operations.** On behalf of this client, Mr. Erling prepared a detailed operating model of the clients' district cooling system. The model takes into account the monthly and hourly load profiles of different customer types, as well as the alternative sources of cooling within the system and their associated operating costs and capacity limits. The model is currently being used to optimize the operating parameters of the cooling system and to refine pricing strategies for different customer groups.

Distribution and Transmission

- **New Brunswick Power—Overhead Capitalization and Corporate Cost Allocation.** Mr. Erling helped this client update their policies and models for the capitalization of overhead costs and for the allocation of general corporate costs to a number of operating entities. Our work included the development of appropriate cost drivers for the allocation of operating and maintenance costs between capital and operating expenses. This study also included a review of the approach that the company used to charge direct labour burdens to capital projects at the company.
- **Union Gas—Overhead Capitalization Policies.** Mr. Erling helped this client update their policies and models for the capitalization of overhead costs. Our work included the development of appropriate cost drivers for the allocation of operating and maintenance costs between capital and operating expenses. This study also included a detailed assessment of the linkage between various support functions and capital activity at the company.
- **Toronto Hydro—Treatment of Tax Variances.** During the OEB's recent 2006 EDR process, KPMG prepared a report for Toronto Hydro on the treatment of tax variances in the LDC rate-setting process. At issue was the treatment of variances between actual and forecast taxes in a

regime where revenue and expense variances are not subject to true-ups. Jonathan then provided expert testimony at OEB hearing on our findings and conclusions. Our report was supported by a number of major players in the LDC sector, including Hydro One, Hamilton Utilities Corporation, and PowerStream. The OEB adopted the treatment that was recommended in our report.

- **Enwin Powerlines—Regulatory Asset Assistance.** On behalf of this client, KPMG developed a detailed estimate of the costs that would have been incurred, under normal project management conditions, to install a Customer Information System (CIS) to meet the requirements for opening of the retail market. This counter-factual estimate was needed because the actual circumstances of the client's implementation process did not meet certain tests required by the OEB for cost recovery. Jonathan served as a key member of the project team, and provided input on regulatory issues associated with this estimate.
- **Enwin Utilities—Development of Cost Allocation Methodology.** Mr. Erling managed this project to develop a cost-allocation methodology for Enwin Utilities (EwU), which is an affiliate of the local electricity distribution company in Windsor. EwU provides a variety of shared services to the electricity LDC, the water commission, a telecommunications provider, and a competitive energy affiliate. Services provided include finance, human resources, customer service, stores management, and fleet management. Our cost allocation methodology takes into account the underlying cost drivers in various departments, and calculates end-user shares based on a detailed assessment of services provided.
- **Town of Aurora—Sale of Electricity Distribution Utility.** Mr. Erling provided financial advice to Council at the Town of Aurora during its deliberations over the future of the Town's local distribution utility. Council evaluated a range of options, including two purchase offers, a merger proposal, and operation on a stand-alone basis. Council ultimately decided on a sale option. Mr. Erling also provided advice on terms of the purchase contract.

Frank Chen, Senior Manager
Background

Frank has been with KPMG for nine years and is a Director in the Risk and Compliance practice in Calgary. Frank also serves as the Financial Risk Management / Energy Risk Management service line leader for Western Canada. Frank has over 14 years of experience in developing and implementing risk management solutions for companies engaged in energy transacting activities.

Professional and Industry Experience

Frank is an energy specialist who focuses on risk management practices, energy procurement, hedging strategies, valuation methodologies, risk governance, analytics, and trading infrastructure.

Representative Experience

- Performed a risk assessment of the power business unit of a federal agency in the Northwest. This risk assessment involved a gap analysis of governance, power procurement and credit roles and responsibilities, policies and practices, and back office procedures against leading industry practices. The review included an understanding of hydrologic generation, load/resource balancing, operational planning, and "SLICE" products.
- Performed a risk review of the wholesale energy business activities for three Washington public utility districts and their power management agent. This risk review applied a modified risk control framework to correspond with each utility inherent obligation to serve load. The review included an assessment of the power management agent's supply and demand forecasting practices as well as governance, roles and responsibilities, valuation and market risk measurement, credit, and operational controls.
- Performed a risk assessment of the trading and marketing unit of a southwest investor-owned utility. The risk assessment focused on middle and back office functions and resulted in recommendations addressing model backtesting, valuation adjustments and reserve methodologies, and independent reconciliation practices

Technical Skills

Software:

- Allegro, TriplePoint, Excelergy, Openlink

Publications and Speaking Engagements

- "Enterprise Risk Management", IECA Conference, Orlando, October 2009
- "Applying Enterprise Risk Analysis to Corporate Ratings," IIA Roundtable, Los Angeles, October 2008
- "Sarbanes-Oxley, On the Road to Compliance and Beyond," EPRI Conference (San Diego), February 2004
- "Weather Derivatives - Know Your Options," Energy Houston, February 2000
- "Energy Risk Management Fundamentals," Florida Progress Executive Education, September 1998



TERMS AND CONDITIONS FOR ADVISORY AND TAX SERVICES

1. TERMS AND CONDITIONS.

- a. The Terms and Conditions are an integral part of the accompanying Proposal or Engagement Letter from KPMG that identifies the engagement to which they relate.
- b. In the event of conflict between the Proposal or Engagement Letter and the Terms and Conditions, the Terms and Conditions shall prevail unless specific reference to a provision is made in the Proposal or Engagement Letter. Other capitalized words in the Terms and Conditions shall have the meanings given to them in the Proposal or Engagement Letter.

2. SERVICES.

KPMG will use reasonable efforts to complete the performance of the services within any agreed-upon time-frame. It is understood and agreed that KPMG's services may include advice and recommendations; but all decisions in connection with the implementation of such advice and recommendations shall be the responsibility of, and made by, Client. KPMG will not perform management functions or make management decisions for Client. Nothing in the Terms and Conditions shall be construed as precluding or limiting in any way the right of KPMG to provide services of any kind or nature whatsoever to any person or entity as KPMG in its sole discretion deems appropriate.

3. CLIENT RESPONSIBILITIES.

- a. Client agrees to cooperate with KPMG in the performance of the services under the Engagement Letter and shall provide or arrange to provide KPMG with timely access to and use of the personnel, facilities, equipment, data and information to the extent necessary for KPMG to perform the services under the Engagement Letter. Client shall be responsible for the performance of its employees and agents and for the accuracy and completeness of all data and information provided to KPMG for purposes of the performance by KPMG of its services hereunder. The Proposal or Engagement Letter may set forth additional responsibilities of Client in connection with the engagement. Client acknowledges that Client's failure to perform these obligations could adversely impact KPMG's ability to perform its services.
- b. Client agrees that Client, and not KPMG, shall perform the following functions: (i) make all management decisions and perform all management functions; (ii) designate an individual who possesses suitable skill, knowledge and experience, preferably within senior management, to oversee the performance of the services under the Engagement Letter, and to evaluate the adequacy and results of such services; (iii) accept responsibility for the results of such services; and (iv) establish and maintain internal controls over the processes with which such services are concerned, including, without limitation, monitoring ongoing activities.
- c. Client acknowledges and agrees that KPMG will, in performing the services, base its conclusions on the facts and assumptions that Client furnishes and that KPMG may use data, material, and other information furnished by or at the request or direction of Client without any independent investigation or verification and that KPMG shall be entitled to rely upon the accuracy and completeness of such data, material and other information. Inaccuracy or incompleteness of such data, material and other information furnished to KPMG could have a material effect on KPMG's conclusions.
- d. Client acknowledges that information made available by it, or by the others on Client's behalf, or otherwise known to partners or staff of KPMG who are not engaged in the provisions of the services shall not be deemed to have been made available to the individuals within KPMG who are engaged in the provision of the services hereunder. Client undertakes that, if anything occurs after information is provided by Client to KPMG to render such information untrue, unfair or misleading, Client shall promptly notify KPMG.

4. REPORTING.

- a. During the performance of the services, KPMG may supply oral, draft or interim advice, reports or presentations but in such circumstances KPMG's written advice or final written report shall take precedence. No reliance should be placed by Client on any oral, draft or interim advice, reports or presentations. Where Client wishes to rely on oral advice or oral presentation, Client shall inform KPMG and KPMG will provide documentary confirmation of the advice concerned.
- b. Subsequent to the completion of the engagement, KPMG will not update its advice, recommendations or work product for changes or

modification to the law and regulations, or to the judicial and administrative interpretations thereof, or for subsequent events or transactions, unless Client separately engages KPMG to do so in writing after such changes or modifications, interpretations, events or transactions.

5. WORKING PAPERS AND USE OF REPORTS.

KPMG also retains all rights (including copyright) in all reports, written advice and other working papers and materials developed by KPMG during the engagement. Unless contemplated by the Engagement Letter, all reports and written advice are intended solely for Client's internal use and, where applicable, government taxation authorities, and may not be edited, distributed, published, made available or relied upon by any other person without KPMG's express written permission. If such permission is given, Client shall not publish any extract or excerpt of KPMG's written advice or report or refer to KPMG without providing the entire advice or report at the same time. Subject to the restrictions of Section 6, KPMG is entitled to use or develop the knowledge, experience and skills of general application gained through performing the engagement.

6. CONFIDENTIALITY.

- a. Except as described in section 5 above, Client will treat in confidence any KPMG methodologies, know-how, knowledge, application or software identified by KPMG as confidential information of KPMG, and will not use or disclose such confidential information of KPMG to others.
- b. KPMG will treat as confidential all proprietary information obtained from Client in the course of the engagement and, except as described in this section, KPMG will only use such information in connection with the performance of its services.
- c. The above restrictions shall not apply to any confidential information that: (i) is required by law or professional standards applicable to KPMG to be disclosed; (ii) that is in or hereafter enters the public domain; (iii) that is or hereafter becomes known to Client or KPMG, as the case may be, without breach of any confidentiality obligation; or (iv) that is independently developed by Client or KPMG, as the case may be.
- d. KPMG shall be entitled to include a description of the services rendered in the course of the engagement in marketing and research materials and disclose such information to third parties, provided that all such information will be rendered anonymous and not subject to association with Client.
- e. [INTENTIONALLY DELETED]

f. [INTENTIONALLY DELETED]

7. PERSONAL INFORMATION.

KPMG may be required to collect, use and disclose personal information about individuals during the course of this engagement. KPMG will only collect, use or disclose such personal information in accordance with the KPMG Privacy Policy, a copy of which will be provided on request.

8. INFORMATION PROCESSING OUTSIDE OF CANADA.

[INTENTIONALLY DELETED]

9. CONSENTS AND NOTICES.

[INTENTIONALLY DELETED]

10. TAXES/BILLING/EXPENSES/FEES.

- a. All fees and other charges do not include any applicable federal, provincial, or other goods and services or sales taxes, or any other taxes or duties whether presently in force or imposed in the future. Any such taxes or duties shall be assumed and paid by Client without deduction from the fees and charges hereunder.
- b. Bills, including, without limitation, a charge on account of all reasonable expenses, including travel, meals, accommodations, long distance, telecommunications, photocopying, delivery, postage, clerical assistance and database research will be rendered on a regular basis as the engagement progresses. Accounts are due when rendered. Interest on overdue accounts is calculated at the rate noted on the invoice commencing 30 days following the date of the invoice.
- c. Without limiting its rights or remedies, KPMG shall have the right to halt or terminate entirely its services until payment is received on past due invoices.



TERMS AND CONDITIONS FOR ADVISORY AND TAX SERVICES

d. [INTENTIONALLY DELETED]

11. LIMITATION ON WARRANTIES.

THIS IS A SERVICES ENGAGEMENT. KPMG WARRANTS THAT IT WILL PERFORM SERVICES HEREUNDER IN GOOD FAITH WITH QUALIFIED PERSONNEL IN A COMPETENT AND WORKMANLIKE MANNER IN ACCORDANCE WITH APPLICABLE INDUSTRY STANDARDS. KPMG DISCLAIMS ALL OTHER WARRANTIES, REPRESENTATIONS OR CONDITIONS, EITHER EXPRESS OR IMPLIED, INCLUDING, WITHOUT LIMITATION, WARRANTIES, REPRESENTATIONS OR CONDITIONS OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

12. LIMITATION ON LIABILITY.

a. Client agrees that KPMG shall not be liable to Client for any actions, damages, claims, liabilities, costs, expenses, or losses in any way arising out of or relating to the services performed hereunder.

b. In the event of a claim by any third party against KPMG that arises out of or relates to the services performed hereunder, Client will indemnify KPMG from all such claims, liabilities, damages, costs and expenses, including, without limitation, reasonable legal fees.

c. In no event shall KPMG be liable for consequential, special, indirect, incidental, punitive or exemplary damages, costs, expenses, or losses (including, without limitation, lost profits and opportunity costs). In any action, claim, loss or damages arising out of the engagement, Client agrees that KPMG's liability will be several and not joint and several. Client may only claim payment from KPMG of KPMG's proportionate share of the total liability based on degree of fault.

d. For purposes of this section, the term KPMG shall include its associated and affiliated entities and their respective partners, directors, officers and employees. The provisions of this section shall apply regardless of the form of action, damage, claim, liability, cost, expense, or loss, whether in contract, statute, tort (including, without limitation, negligence) or otherwise.

13. LEGAL PROCEEDINGS.

a. Client agrees to notify KPMG promptly of any request received by Client from any court or applicable regulatory authority with respect to the services hereunder, KPMG's advice or report or any related document.

b. If KPMG is required by law, pursuant to government regulation, subpoena or other legal process or requested by Client to produce documents or personnel as witnesses arising out of the engagement and KPMG is not a party to such proceedings, Client shall reimburse KPMG at standard billing rates for professional time and expenses, including, without limitation, reasonable legal fees, incurred in responding to such requests.

c. When requested or required by law, subpoena or other legal process or otherwise, that KPMG provide information and documents relating to Client's affairs, KPMG will use all reasonable efforts to refuse to provide information and documents over which Client asserts legal privilege or which has been acquired or produced in the context of the engagement of legal counsel by or on behalf of Client, except where providing such copies, access or information is required by law, by a provincial Institute/Ordre pursuant to its statutory authority, or a public oversight board in respect of reporting issuers (both in Canada and abroad) pursuant to its contractual or statutory authority. Where Client provides any document to KPMG in respect of which Client wishes to assert legal privilege, Client shall clearly mark such document "privileged" and shall otherwise clearly advise KPMG that Client wishes to maintain legal privilege in respect thereof.

14. LIMITATION PERIOD.

No action, regardless of form, arising under or relating to the engagement, may be brought by either party more than one year after the cause of action has accrued or in any event not more than five years after completion of the engagement in the case of an advisory services engagement and not more than eight years after completion of the engagement in the case of a tax services engagement, except that an action for non-payment may be brought by a party not later than one year following the date of the last payment due to such party hereunder. For purposes of this section, the term KPMG shall include its associated and affiliated entities and their respective partners, directors, officers and employees.

15. TERMINATION.

Unless terminated sooner in accordance with its terms, the engagement shall terminate on the completion of KPMG's services hereunder, which completion shall be evidenced by the delivery by KPMG to Client of the final invoice in respect of the services performed hereunder. Should Client not fulfill its obligations set out herein or in the Engagement Letter and in the absence of rectification by Client within 10 days, KPMG may, upon written notice, terminate its performance and will not be responsible for any loss, cost or expense resulting. The engagement may be terminated by either party at any time by giving written notice to the other party not less than 30 calendar days before the effective date of termination. Upon early termination of the engagement, Client shall be responsible for the payment to KPMG for KPMG's time and expenses incurred up to the termination date, as well as reasonable time and expenses to bring the engagement to a close in a prompt and orderly manner.

16. E-MAIL COMMUNICATION.

Client recognizes and accepts the risks associated with communicating by Internet e-mail, including (but without limitation) the lack of security, unreliability of delivery and possible loss of confidentiality and privilege. Unless Client requests in writing that KPMG does not communicate by Internet e-mail, Client assumes all responsibility or liability in respect of risk associated with its use.

17. POTENTIAL CONFLICTS OF INTEREST.

[INTENTIONALLY DELETED]

18. FORCE MAJEURE.

Neither Client nor KPMG shall be liable for any delays resulting from circumstances or causes beyond its reasonable control, including, without limitation, fire or other casualty, act of God, strike or labour dispute, war or other violence, or any law, order or requirement of any governmental agency or authority.

19. INDEPENDENT CONTRACTOR.

[INTENTIONALLY DELETED]

20. SURVIVAL.

Sections 1 to 17 and 20, 21, 25, 26 and 30 hereof shall survive the expiration or termination of the engagement.

21. SUCCESSORS AND ASSIGNS.

The Terms and Conditions and the accompanying Proposal or Engagement Letter shall be binding upon the parties hereto and their respective associated and affiliated entities and their respective partners, directors, officers and employees and successors and permitted assigns. Except as provided below, neither party may assign, transfer or delegate any of the rights or obligations hereunder without the prior written consent of the other party. KPMG may assign its rights and obligations hereunder to any affiliate or successor in interest to all or substantially all of the assets or business of the relevant KPMG practice, without the consent of Client. In addition, KPMG may engage independent contractors and member firms of KPMG International to assist KPMG in performing the services hereunder.

22. SEVERABILITY.

The provisions of the Terms and Conditions and the accompanying Proposal or Engagement Letter shall only apply to the extent that they are not prohibited by a mandatory provision of applicable law. If any of these provisions shall be held to be invalid, void or unenforceable, then the remainder of the Terms and Conditions and the attached Proposal or Engagement Letter, as the case may be, shall not be affected, impaired or invalidated, and each such provision shall be valid and enforceable to the fullest extent permitted by law.

23. ENTIRE AGREEMENT.

The Terms and Conditions and the accompanying Proposal or Engagement Letter including, without limitation, Exhibits, constitute the entire agreement between KPMG and Client with respect to the engagement and supersede all other oral and written representation, understandings or agreements relating to the engagement.



TERMS AND CONDITIONS FOR ADVISORY AND TAX SERVICES

24. GOVERNING LAW.

The Terms and Conditions and the accompanying Proposal or Engagement Letter shall be subject to and governed by the laws of the province in which KPMG's principal office performing the engagement is located (without regard to such province's rules on conflicts of law) and all disputes arising hereunder or related thereto shall be subject to the exclusive jurisdiction of the courts of such province.

25. PUBLICITY.

[INTENTIONALLY DELETED]

26. KPMG INTERNATIONAL MEMBER FIRMS.

In the case of multi-firm engagements, all member firms of KPMG International performing services hereunder shall be entitled to the benefits of the Terms and Conditions. Client agrees that any claims that may arise out of the engagement will be brought solely against KPMG, the contracting party and not against any other KPMG International member firms.

27. SARBANES-OXLEY ACT.

Except as set forth in the Engagement Letter, Client acknowledges that completion of the engagement or acceptance of KPMG's reports, advice, recommendations and other deliverables resulting from the engagement will not constitute a basis for Client's assessment of internal control over financial reporting or Client's evaluation of disclosure controls and procedures, or its compliance with its principal officer certification requirements under Section 302 of the *Sarbanes-Oxley Act of 2002* (the "Act"). The engagement shall not be construed to support Client's responsibilities under Section 404 of the Act requiring each annual report filed under Section 13(a) or 15(d) of the *Securities Exchange Act of 1934* to contain an internal control report from management.

28. NATIONAL INSTRUMENT 52-109.

Except as set forth in the Engagement Letter, Client acknowledges that completion of the engagement or acceptance of KPMG's reports, advice, recommendations and other deliverables resulting from the engagement

will not constitute a basis for Client's evaluation of disclosure controls and procedures, or its compliance with its CEO/CFO certification requirements under *National Instrument 52-109, Certification of Disclosure in Issuers' Annual and Interim Filings*, including those related to the design of internal control over financial reporting.

29. SPECIFIC ACCOUNTING ADVICE.

Except as set forth in the Engagement Letter, the engagement does not contemplate the provision of specific accounting advice or opinions or the issuance of a written report on the application of accounting standards to specific transactions and facts and circumstances of Client. Such services, if requested, would be provided pursuant to a separate engagement.

30. TAX SERVICES.

[INTENTIONALLY DELETED]

31. LLP.

KPMG LLP is a registered limited liability partnership ("LLP") established under the laws of the Province of Ontario and, where applicable, has been registered extra-provincially under provincial LLP legislation. KPMG is a partnership, but its partners have a degree of limited liability. A partner is not personally liable for any debts, obligations or liabilities of the LLP that arise from a negligent act or omission by another partner or any person under that other partner's direct supervision or control. The legislation relating to limited liability partnerships does not, however, reduce or limit the liability of the firm. The firm's insurance exceeds the mandatory professional indemnity insurance requirements established by the various Institutes/Ordre of Chartered Accountants. Subject to the other provisions hereof, all partners of the LLP remain personally liable for their own actions and/or actions of those they directly supervise or control.

32/09

**MANITOBA
THE PUBLIC UTILITIES BOARD ACT
THE MANITOBA HYDRO ACT
THE CROWN CORPORATIONS PUBLIC
REVIEW AND ACCOUNTABILITY ACT**

Order No. 32/09

March 30, 2009

Before: Graham Lane CA, Chair
Robert Mayer Q.C., Vice-Chair
Susan Proven, P.H.Ec., Member

**AN ORDER APPROVING APRIL 1, 2009 RATES
FOR MANITOBA HYDRO**

5.0 IT IS THEREFORE ORDERED THAT:

1. MH's Application for approval of a 4% rate increase, effective April 1, 2009 BE AND IS HEREBY VARIED.
2. MH is to immediately file, for Board approval, revised rate schedules, to take effect April 1, 2009 and demonstrate and recover a 2.9% increase in revenues derived from energy rates (consistent with the methodology as contained in Appendix 9, Attachment 'D' to the February 2, 2009 Status Report) from all customer classes, except for Area and Roadway Lighting.
3. MH to prepare a series of alternative 20-year scenarios (IFF/Power Resource Plan/Capital Plan), to reflect:
 - a) A pessimistic view of export prices (minimal U.S. - CO₂ pricing levels).
 - b) A periodic one-year drought (e.g. 2003-04).
 - c) A periodic multi-year drought (e.g. 1940's or 1980's).
 - d) Zero long-term contract commitments.
 - e) A strong movement to domestic electric heating.
 - f) Existing transmission tie-line constraints.
 - g) Potential carbon tax on MH's imports and a doubling of water rental rates.
4. MH to file by September 30, 2009, for Board approval, a conceptual outline for an in-depth and independent study of all the operational and business risks facing the corporation. The study to be a thorough and quantified Risk Analysis, including probabilities of all identified operational and business risks. This report should consider the implications of planned capital spending taking into account export revenue growth, variable interest rates, drought, inflation experience and risk, and potential currency fluctuation.

PUB/MH/RISK-74

Reference: KPMG Report – Main Report/End of May 2010 MH Workshop

c) Please indicate the time frame and extent that the KPMG review was intended to capture in their analysis of MH's forecasting procedures:

- 2009/10 +/- or
- 2004/05 to 2008/09 +/-or
- 1999/00 to 2003/04.

ANSWER:

KPMG was not asked to review a particular time frame. Rather, their mandate was to review the assertions made by the NYC which included the period from approximately 2006 to 2008.

PUB/MH/RISK-74

Reference: KPMG Report – Main Report/End of May 2010 MH Workshop

Risk Issue: MH Workshop

- d) Please explain why KPMG (or MH) did not do a model verification run employing the actual drought event data (GWh/¢/KWh/etc.) for the 2002/03 and 2003/04 period.

ANSWER:

KPMG was not asked to do a model verification run for 2002-2004 as it was prior to the initial NYC engagement. KPMG reviewed Manitoba Hydro's drought management strategies, the validity of its models and forecasting technique. The results of that review found:

- Manitoba Hydro's process for forecasting water flow is reasonable; the process is statistically sound and is a standard industry approach.
- The use of historical water flow data for forecasting is reasonable.
- Manitoba Hydro has taken appropriate care and due diligence in developing, operating and maintaining the models.

Manitoba Hydro's drought management strategies, models and forecasting technique were all in place in 2002-2004 and testing them against that specific year with perfect hindsight with regard to prices would not have changed the conclusions.

NYC/MH Issue # 26.

Source: NYC Long Term Contracts

SubIssue: Risk

Subject: While Hydro has built its business on "preserving Long Term Relationships" with key customers, it was also noted that during the Drought of FY0304, none of the personnel involved in the Long Term Contracting departments were involved in offering beneficial quotes to Hydro. It was relationships created in the "short-term time frame" and those counterparties (who have no long-term contracts or price discount benefit from the Corporation) that in fact assisted Hydro and provided equitable discounts to assist Hydro in its times of Drought. No long term staff from any utility was involved in the energy purchases through the Drought. In fact, neighboring utilities such as [REDACTED] charged MH 1. Manitoba Hydro the highest prices for energy during the last drought.

NYC - MH - [D32S11]

NYC/MH Issue # 216.

Source: NYC Risk

SubIssue: Risk

Subject: Losses in the FY0304 should have fallen within the 95% confidence level and not exceeded \$345MM as stated above. Unprecedented losses posted in the Annual Reports were caused by internal mismanagement (including in the gas book) and could have been avoided...

NYC - MH - [V5]

NYC/MH Issue # 235.

Source: NYC Risk

SubIssue: Risk

Subject: Stale and static prices were found to be used in the Hermes system between FY0304 and FY0607. Even as MISO was implemented in 2005, the Decision Support System was not updated for several years to be current with market deregulation. Using stale prices even in deregulation and the Drought shows serious oversights and mismanagement in the PS&O department. Direct Provincial losses of \$44 million dollars was noted in one year alone. Rate-Payer increases have had to fund these losses.

Using stale prices in deregulation was found to be a huge disconnect in Trading Floor operations by the Division Manager.

NYC - MH - [8A]

PUB/MH/RISK-99

Reference: page 47 Exhibit 3-4

Risk Issue: HERMES Model Validation

- a) Please provide the respective data points for the graph and provide a comparison with actual versus forecast generation.

ANSWER:

See table below. These forecasts were produced in late summer or in the fall; hence early months of the fiscal year forecast contained actuals.

| Fiscal Year | Forecast Date | Forecast Generation GWh | Actual Generation GWh | Variance GWh | Variance % |
|--------------------|----------------------|--------------------------------|------------------------------|---------------------|-------------------|
| 1999/00 | 1999-09-09 | 29347 | 30146 | 799 | 3 |
| 2000/01 | 2000-09-27 | 32265 | 32687 | 422 | 1 |
| 2001/02 | 2001-09-24 | 33419 | 32557 | -862 | -3 |
| 2002/03 | 2002-09-10 | 29924 | 29118 | -806 | -3 |
| 2003/04 | 2003-09-10 | 21820 | 19369 | -2451 | -11 |
| 2004/05 | 2004-10-08 | 30918 | 31534 | 616 | 2 |
| 2005/06 | 2005-08-10 | 36516 | 37629 | 1113 | 3 |
| 2006/07 | 2006-08-22 | 33515 | 32121 | -1394 | -4 |
| 2007/08 | 2007-10-01 | 34330 | 35354 | 1024 | 3 |
| 2008/09 | 2008-09-24 | 34547 | 34528 | -19 | 0 |
| Average | | 31660 | 31504 | -156 | 0 |

PUB/MH/RISK-99

Reference: page 47 Exhibit 3-4

Risk Issue: HERMES Model Validation

- b) Please discuss the implications on the financial loss incurred as a result of the 2003/04 drought with interpretation of the above chart in (a)**

ANSWER:

Actual hydraulic generation in 2003/04 was less than forecast in the beginning of September 2003. As a result there were increased costs associated with serving load demands than were forecast for 2003/04. Offsetting these costs were higher than expected carry over storage into 2004/05 which resulted in increased net export revenue in 2004/05 vs. what was forecast in fall of 2003.

PUB/MH/RISK-99

Reference: page 47 Exhibit 3-4

Risk Issue: HERMES Model Validation

- c) Please discuss to what extent KPMG satisfied itself on the accuracy of Exhibit 3-4

ANSWER:

KPMG Response:

Exhibit 3-4 was based on a table provided by MH to KPMG that compared actual to forecast generation for each of the fiscal years shown. KPMG verified that the numbers in the table matched numbers provided in the relevant Generation Estimate reports for each year. With respect to Generation Estimate report, we reviewed both the reports containing actual data after the fact and the forecast reports produced in late summer for the purpose MH's financial forecasting process.

PUB/MH/RISK-96

Reference: KPMG report page 30

Risk Issue: HERMES/ SPLASH Model Assumptions

- a) **Please elaborate on which of the NYC listed assumptions are correct and also list the NYC assumptions which are incorrect such that KPMG determined that the implications identified are not meaningful. Please provide reasons for each specific case.**

ANSWER:

KPMG Response:

KPMG developed a conceptual framework to guide it in its external quality review of Manitoba Hydro, as detailed in Section 1.2. In applying this conceptual framework, KPMG carried out a detailed review of the NYC Consultant's Reports and other documents to group the NYC's assertions into the Issues and Themes as presented in the KPMG report. In assessing the Issues, we took the approach that our work would not necessarily result in a total concurrence with or rejection of the assertions underlying an Issue; in some instances, we have found that we concur with some elements of an assertion and reject other elements. Accordingly, we would suggest that readers of this report focus on the analysis of the Issues as well as any recommendations that relate to the Issues, rather than focusing on whether we concur with or reject any particular assertion. However, the key error made by the NYC was assuming that forecast production schedules lead to corresponding sales of energy in future periods through forward contracts. As a result, the NYC assumes that subsequent changes in production forecasts for these future periods could result in financial losses as MH either attempts to unwind these contracts or ends up being "short" in real-time energy markets.

PUB/MH/RISK-96

Reference: KPMG report page 30

Risk Issue: HERMES/ SPLASH Model Assumptions

- b) Without providing the details of any calculations, please indicate each case where KPMG attempted to replicate the NYC's estimates, and provide detailed KPMG commentary on their findings from the analysis.**

ANSWER:

KPMG Response:

We have noted in our report instances where we attempted to duplicate the numbers quoted by the NYC as follows:

- Page 78: As noted in the text, we were able to roughly duplicate NYC's estimate of \$50 million for the risks associated with water flow uncertainty.
- Page 75, Exhibit 3-10. We came up with different numbers than NYC with respect to correlations between prices in peak and off-peak periods.

PUB/MH/RISK-95

Reference: KPMG Report page 28

Risk Issue: Financial Model Testing

- b) Please indicate whether KPMG undertook any back testing in assessing the validity of the models. In particular was any back testing undertaken by KPMG of the 2003/04 drought period. If not, why not?**

ANSWER:

KPMG Response:

KPMG did not request any back-testing with respect to the 2003/04 drought period. This period was out of scope for our analysis, because our work was focused on the period covered by the Consultant's Reports. We also noted that the 2003/04 drought had already been the subject of a prior PUB review and of other external consultant reports.

Manitoba Hydro

**Risk Management Review of
Power Sales and Operations**

PREPARED BY:

RISKADVISORY
CALGARY, ALBERTA
APRIL 1, 2003

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Introduction

RiskAdvisory is a Calgary-based consulting firm specializing exclusively in the provision of energy risk management advisory services to members of the global energy sector. Since its inception in 1995, RiskAdvisory has worked on advisory mandates with over 160 energy companies in Canada, the United States and New Zealand on a broad range of issues surrounding the management of commodity and foreign exchange market risks.

RiskAdvisory has been retained by the Manitoba Hydro ("Hydro" or "the Company") to conduct a thorough review of the risk exposures that have arisen from participation in the wholesale electricity markets and fuel procurement activities. Specifically, RiskAdvisory has been retained to complete the following tasks

- Provide a half-day risk management workshop with content determined in consultation with Hydro. The workshop took place on November 12th in Hydro's offices in Winnipeg;
- Assist in building an internal consensus around the objectives behind the trading/export market activities;
- Assist in the design of appropriate benchmarking tools in order to properly assess the success of any trading/export market activities;
- Advise Hydro on appropriate strategies to optimize the power supply and export market portfolio and fuel purchasing activities.

This report is a preliminary report that sets out the primary risks facing Hydro that are a direct result of their activities in the wholesale power and fuel markets. The report is meant to stimulate further discussion of the magnitude of the risks, as well as determining appropriate benchmarks and implementation strategies. A final report, outlining the risks in greater detail, appropriate benchmarks, and implementation strategies will be completed and delivered to Hydro no later than March 31, 2003.

Background

Manitoba Hydro has been engaging in off-system sales for more than 40 years. Explosive growth in this activity occurred in the late 1990's when export sales increased from under \$300mm in revenue to 2002 when export sales revenue topped \$600mm. Over the past two years the export sales market, as a percentage of electric revenues, has made up over 40% of total electric revenues compared to less than 10% in the early 90's.

Hydro has 5,480 MW's of installed capacity. Of this amount, 4,978 MW's are hydro based, 406 MW's are gas based, and 96 is coal-fired generation. Hydro's peak day occurs in the winter at a maximum of 4,100 MW's leaving ample supply for off system sales to Saskatchewan, Ontario, and/or the U.S. During the summer Hydro's peak is approximately 3,100 MW's. In addition to domestic load, Hydro has over 1800 MW's sold in the forward export market mainly during the summer season to US customers, some of which go out over the next 15 years. With domestic load growth these forward sales gradually will terminate. New generation is not required to serve the domestic demand until around 2020.

The largest unknown in the portfolio is the availability of hydro resources. The risk of a drought is a primary reason that more long-term firm sales have not been consummated. Overselling firm power beyond dependable resources would put Hydro in a riskier position, exposing it to supply shortfalls and to potentially high costs resulting from having to buy wholesale power. Hydro's dependable resources already expose it to the high cost of natural gas fired generation and/or wholesale power purchase costs during extreme drought conditions when power from hydro resources is unavailable. Hydro also has to contend with a risk of lost revenues if they do not make enough firm export sales and the energy is sold in the spot market. In addition Hydro has to contend with the risk of spillage if reservoirs are not drawn down and inflows are above average.

Over the past several years, Hydro's domestic electricity rates have been regulated on a cost of service basis. The Company is also overseen by a Crown Corporation Council that acts on behalf of the shareholders or taxpayers of Manitoba. In 1999, Manitoba Hydro purchased the Manitoba gas LDC, Centra Manitoba ("Centra"). Centra was

previously owned by Westcoast Energy, a private sector company based in Vancouver. Centra was, and still is, regulated differently than Hydro, on a rate-of-return basis.

RiskAdvisory and Hydro met in November 2002 to discuss the risks that Hydro is facing from its activity in the wholesale power markets and from its fuel procurement activities. Based on the information provided to us, we have come to the conclusion that the Power Sales and Operations Division of Manitoba Hydro has a very solid understanding of what risks it faces. The challenge going forward will be to determine the magnitude of the risks, how to benchmark the risks, what instruments are available in the marketplace to manage these risks and how to implement a strategy that optimizes the risk/return of the generating assets.

Revenue Risks

Manitoba Hydro has sold over one billion dollars (\$1 bln) in exports over the past two years. The customer base has gone from 5 customers to over 90 customers since November 1996. Export sales have accounted for over 40% of total electric revenues with the revenue from one sale to NSP (a large Minneapolis based utility) accounting for about 35% of the total. Manitoba Hydro's current target for net export revenues (export sales minus associated costs) is 26%.

The recent unexpected large increase in export revenues has given the government of Manitoba the ability to put a dividend policy in place. The magnitude of the dividend is such that the export sales are counted on in order to make the dividend payment.

Committed Long Term Firm Contract Revenues

The majority of Hydro's long-term contracts are at a fixed price with an escalator tied to some kind of price index such as PPI or CPI. The risk around the CPI or PPI has been initially estimated at around \$10mm per year¹. Given that Hydro likely has costs that are also associated with a lower price index, the absolute magnitude of this risk is likely small and therefore deserves a lesser focus than other risks within the risk management programme. The main risk tied to the committed long-term firm sales is on the cost side

¹ All figures in this report were provided by Manitoba Hydro for fiscal year 2004/05 and were not independently verified by RiskAdvisory.

of supplying the contract power in a drought year. These risks will be discussed later in the report.

Uncommitted Long Term Firm Contract Revenues

Manitoba Hydro estimates that there is a \$40 million risk to its revenue from its uncommitted long-term firm sales. This calculation is based on a \$15 move from budgeted expectations. While some may see this as an opportunity loss, we believe that Hydro should manage this risk as long as there is a dividend policy set by the shareholder. If the \$40mm risk was left open, the payment of the dividend may be at risk. However, it should be realized that by locking in the sales at current levels, opportunity losses may result in a higher price environment.

The most optimal method of managing this risk would be through the purchase of electricity options. Unfortunately, the market for electricity options is virtually non-existent. Alternatively, this risk can be managed through a natural gas put option programme. Given the high correlation between natural gas and power prices, Hydro could purchase annually settled natural gas puts to protect against a fall in gas prices. The theory is that as gas prices fall, power prices will fall. If Hydro enters into firm power sales in a depressed market, the shortfall in expected revenue should be made up with the payoffs from the put options.

Manitoba Hydro should begin modeling this and other risks through Monte Carlo simulations. While Monte Carlo modeling presents unique and complex problems, most utilities are moving in this direction for their risk assessments. This Monte Carlo quantification will allow Hydro to make decisions as to an appropriate level of long-term firm sales to make given the risk of drought, as well as the optimal amount of put options required to protect the necessary revenue requirement.

Opportunity Sales

Opportunity sales are very short term in nature and are only made when the sales price exceeds the cost of the additional supply needed to make the sale. Manitoba Hydro has estimated \$90 million in risk associated with this activity, which represents the entire amount of opportunity sales in any one year. This level of risk is assuming a drought

year and assumes that no opportunity sales will be made due to poor water conditions. The theory behind this is that all Manitoba generation will go to serve native load.

The Company can manage this risk with weather derivatives or weather insurance. Hydro would pay a premium in exchange for insurance against a major drought. The insurance payout would replace the revenue that would have been received from opportunity sales. Again, the only way to analyze the management of this risk is through a Monte Carlo simulation that analyzes the cost of the insurance relative to the risk of having a \$90 million shortfall.

Credit Risk

Hydro's single largest credit risk is to NSP. Manitoba Hydro has contracts of varying lengths with NSP. Recently a 10-year contract was signed which will commence upon completion of an existing long-term contract that will expire in 2005. Based on peak sales to NSP in the recent past, Hydro has estimated a credit risk of \$45 million, which represents 1.5 months of receivables. We believe this number to be too small. While Hydro may recognize a problem exists as soon as NSP has not paid for the prior months deliveries, it has been our experience that utilities rarely cut off such a significant customer at that point. There may be delays due to discussions around contractual obligations to provide assurances that could extend the delivery period. The Company will more than likely have at least three months of deliveries before it terminates future deliveries. That represents approximately \$90 million in receivables at risk. However, this value is tempered by the fact that a reasonable recovery rate would be anticipated with a load-serving customer. In addition, high recovery rates in excess of 85% have been associated with industries with physical assets, including utilities.

The other potential credit risk lies in the replacement risk of the long-term contract. Hydro is exposed to replacing contract sales if NSP fails to perform its obligations and power prices are lower than contract prices. The long-term sale is escalated by a GDP index and therefore implies a price that is fixed in real terms. The risk of the contract price exceeding market is low unless it is expected that over the long term, electricity prices will decline in real terms. The value of the contract replacement risk would be

equal to the difference between market price and contract price. Again, this risk is best modeled through a Monte Carlo simulation and it is likely to dwarf the accounts receivable risk due to the length of the contract.

NSP is Hydro's largest credit exposure but the Company has potential credit risk with all 90 of its customers. Hydro has been, and should continue to determine its credit exposures to all counterparties. This is especially important given the occurrences over the past 3 years with energy companies.

Credit risk can be managed by a number of tools including margining provisions within contracts and through credit derivatives. Again, the Monte Carlo simulation will assist Hydro in determining the most suitable products at the most reasonable cost.

Cost of Production Risk

Forward sales are also necessary to avoid price volatility in the spot markets or to avoid spillage in high water years. This adds to the complexity of the issue of optimizing the generation resources as the Company cannot make all of its export sales in the short term market so it is forced into selling some of its production long term or run the risk of dumping the energy at depressed prices or spill. On the other hand, selling long-term power opens the Company up to a risk of low water or high domestic loads in which they will need all of their hydro resources to meet native load. In this case, there will likely be buying either natural gas and/or wholesale power to meet their firm sales commitments. This will be at a significantly greater cost than from the hydro resource, and there would be a high probability that the cost would be greater than what Hydro is receiving for their firm sales in that year.

Gas Volumes

In a drought year Manitoba Hydro would have to turn on its gas units in order to meet native load and committed export sales. Without the availability of inexpensive water resources, Hydro might have to use approximately 400MW's of gas-fired generation that would require approximately 110,000 gj's/day of natural gas purchases to meet the firm sales commitments under worse case conditions. Based on a forward gas price of \$US

3.70/Dtm, Hydro has estimated the risk of higher costs from running these gas units at \$175 million.²

Hydro should focus on weather derivatives or insurance to cover this risk. Similar to the discussion on weather insurance earlier in this report, Hydro would pay an insurance premium for this coverage and get paid based on a low water year. Hydro should focus on the Monte Carlo simulation as the basis for any weather insurance acquisition. This will assist Management in making the purchase decision based on sound analytics.

Gas Price

Associated with the gas volume risk is the gas price risk. Hydro's analysis showed a gas volume risk of \$175 million based on a gas price of \$US3.70/Dtm. At the same time, Hydro calculated a risk of \$210 million based on the risk of increasing gas prices. As events over the past few months have shown, this risk is real. Based on the current higher mean and volatility, this risk would be closer to \$350 based on the same 98% confidence level.

Hydro should look at acquiring natural gas call options or costless collars to cover at least a portion of this risk. Again, Monte Carlo analysis will help in determining the proper amount and the cost to acquire these options.

Power Purchase Volume

During the course of a drought year, Hydro will have to purchase power from the wholesale power markets in order to meet its firm load commitments. Similar to the gas volume issue, this power will be much more expensive than the lower cost hydro resources that the Company owns. Hydro has estimated the volume risk to be \$110 million based on current MAPP prices.

Similar to the gas volume risk, this risk can be managed through the use of weather insurance. Again, Monte Carlo simulation software is necessary to properly analyze the cost of the insurance relative to the benefits that the Company will receive.

² Current gas prices of close to \$US6.00/Dtm would put this risk at close to \$300 million.

Power Purchase Price

Similar to the gas price risk discussed earlier, Hydro faces the same risk to increased power prices on the volumes it could need to acquire in a drought year. Natural gas fired generation is the marginal source of electricity in the MAPP region during the peak hours of the day. Under wide spread drought conditions which will affect other MAPP hydro generation, there will be a significant reduction in overall hydro production which will be replaced by a significant increase in gas fired generation exposing Hydro to purchase price risk tied to the volatility of natural gas prices. Based on Hydro's analysis, \$90 million is at risk to increased power prices in a drought year based on the same 98% confidence level used in the gas price analysis above.

The power markets have not developed to the point where a liquid option market exists. As such, in order to properly hedge this risk, Hydro should look towards the liquid natural gas option market to hedge the majority of this risk. During times when gas is setting the market, this will be adequate protection. This protection device will begin to break down in times of shortage pricing in the MAPP market due to the small size of the interconnections between the MAPP region and neighbouring power markets. In times of shortage pricing, the MAPP power price will rise dramatically compared to the gas price. Therefore, gas option protection will not be adequate during these times. Unfortunately, there are not a lot of choices to cover this risk in today's environment.

Similar to the other risks discussed, a Monte Carlo simulation will be necessary to properly analyze this risk.

"Made in Manitoba Risks"

Examples of risks that exist from within the province of Manitoba are risks from higher than forecast domestic load and maintenance of water reserves. These risks may require Hydro to purchase additional power in the MAPP market. Although Hydro will receive additional income from the additional domestic sales, it is unlikely to cover the purchase costs. Hydro has estimated these risks at \$150 million.

In addition there is also the risk of increased water rental payments and interest/guarantee fees to the Province. It is unclear at this point whether these payments to the Province are

risks that should be hedged as they might actually benefit other parts of the Manitoba economy or tax base. Therefore, further analysis is required. Hydro has calculated these risks to a total of between \$110-130 million.

Again, weather insurance may be the appropriate method to cover this risk if indeed they are risks that Hydro needs to manage.

Coal

Hydro also has a small amount of risk to coal and has estimated this risk to be under \$15 million. The majority of this risk is tied to volume which can be covered with weather insurance.

Regulatory and Political Risk

RiskAdvisory's work in other jurisdictions has caused us to recommend to many clients that they approach their respective regulator to present a proposed risk management programme and effectively take a collaborative approach to gain approval to proceed. This serves to eliminate, to the degree possible, any negative hindsight review. The fundamental concept here is that Hydro is acting in effect as agent on behalf of the ratepayers with respect to the implementation of a risk management programme around its risk portfolio. The Regulator should play a role in examining any proposed risk management initiative and determine if it is in the best interest of the ratepayer. It is imperative therefore that there be a strong collaborative effort between all interested parties to share their views on the risk management programme parameters in order for the programme to have any chance of long-term success.

Manitoba Hydro believes and RiskAdvisory concurs that more analysis is required to refine the estimated magnitude of the risk elements in its portfolio described throughout this report and to examine the availability and appropriateness of the various derivative instruments that could potentially be used to manage these exposures. This will determine if a comprehensive risk management programme is viable. If this determination is reached, Senior Management approval would be sought and Hydro staff would work to educate themselves to be equipped to manage such a programme. Once this stage is reached Hydro would approach the MPUB to educate them on the magnitude of the risks

and the various options to manage these exposures on behalf of the ratepayer. The objective would be to have the MPUB approve the programme parameters in principle *ex ante* and avoid the potential for negative hindsight review to the degree possible. This approach is consistent with Hydro's historical relationship with the Board and RiskAdvisory's experience in a number of different regulatory jurisdictions.

RiskAdvisory cannot over-emphasize the importance of documenting the risk management programme parameters, establishing monitoring practices and reporting capabilities as the potential magnitude of hedge losses and opportunity costs could be substantial. It would be our further recommendation that Hydro contemplate the following:

- undertake to conduct periodic workshops with MPUB staff and ratepayer representatives to enhance the understanding of the risk profile faced by Manitoba's ratepayers;
- provide MPUB staff with periodic updates on the status of Hydro's long-term risk position and its potential impact on rate volatility.

Agency Relationship with Affiliate

If Manitoba Hydro determines that a risk management programme involving derivatives is a viable course of action it will need to decide on the relative benefits of developing the required skill set to implement and maintain the programme internally or to outsource this activity. The requisite skill set for natural gas transactions, at least, is already in place at Hydro's wholly-owned subsidiary Centra Manitoba and since gas options would seem to be the primary means of hedging much of the Company's drought year exposures to price, it would seem to make more sense to use Centra's existing infrastructure. Front Office (execution), Middle Office (monitoring and reporting) and Back Office (settlements) are in place at Centra and could be utilized by Hydro on some kind of service arrangement.

RiskAdvisory also got the sense that there is a desire on the part of Manitoba Hydro to break down any lines of distinction between the Company and Centra and a service arrangement between the two entities could assist this goal.

Summary and Next Steps

The next steps that Hydro should consider in contemplation of going forward with a risk management programme initiative are as follows:

- develop a Monte Carlo simulation capability that will facilitate both the quantification of the various exposures as well as the potential costs of the instruments used to hedge the exposures;
- review and determine the optimal instruments to employ in the risk management programme;
- establish criteria for benchmarking the risk management activities to properly assess the success of the programme (this will not be easy);
- develop an implementation strategy;
- develop policies and procedures with appropriate guidelines to ensure best industry practices are adopted for the programme.

Private and Confidential

January 18, 2005

MANITOBA HYDRO
2002-2004 DROUGHT RISK MANAGEMENT REVIEW
JANUARY 18, 2005

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Scope of Report

RiskAdvisory has been retained by Manitoba Hydro ("Hydro" or "the Company") to review the Company's energy portfolio management activities as they pertained to the drought experienced by the Company from 2002-2004 and prepare a report on its findings.

Specifically, the analysis will focus on Hydro's responses to the drought including forward purchases of electricity, book-outs of physical electricity, the acquisition of natural gas storage, call and put option transactions on electricity and natural gas, natural gas tolling transactions, and the subsequent unwinding of natural gas transactions.

The review will also look at the decision-making process deployed by Hydro in acquiring the various risk management products.

RiskAdvisory interviewed key Hydro personnel involved in the drought management including Executives, Management, the Power Trading Department, and the Operations Planning staff.

RiskAdvisory reviewed key pieces of data including

- Master Purchase and Sale Agreements;
- Electricity Transaction Confirmations;
- Natural Gas Transaction Confirmations;
- Storage Injection and Withdrawal Schedules;
- Option Transaction Confirmations;
- Corporate Import/Export Policies and Procedures;
- Export Strategy Documentation;
- Analytics behind decisions;
- Correspondence (Internal and External).

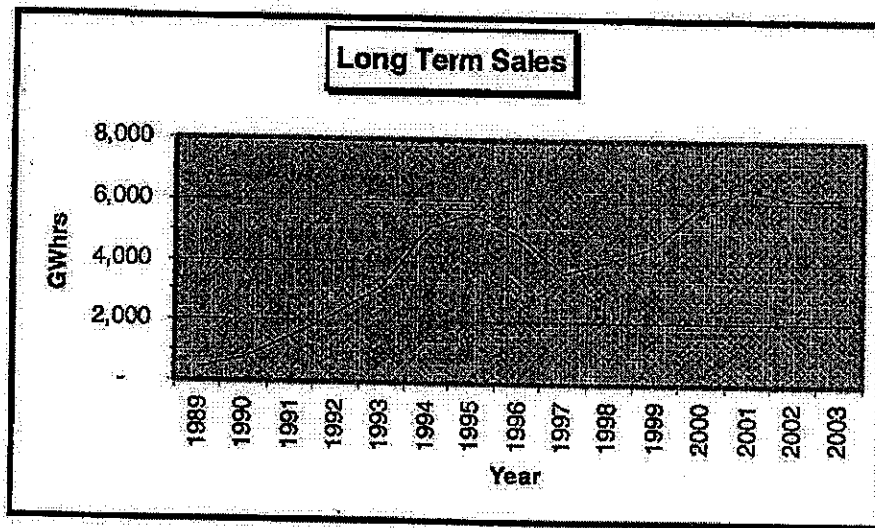
Background

In 1989-1990, Manitoba Hydro suffered its third worst drought since 1912 when records were first retained with respect to hydrological input data. Hydro did not suffer another drought until the spring of 2002. By June of 2003, Manitoba Hydro was experiencing the second lowest water inflows since 1911 and was in drought conditions until April 2004.

The single biggest financial loss in the Company's history occurred in 1989 when they experienced a \$28mm dollar loss. In the '03 drought, the Company lost \$436mm. The major factors that can be attributed to the substantial difference in financial performance from the '89 drought to the '03 drought include:

- Significant increases in long-term fixed price export sales. In 1989, the Company had 423 GWhs of long-term commitments. In 2003, the Company had over 6,100 GWhs of long-term commitments (see figure 1 for historical perspective). These sales generate a substantial amount of revenue for the Company in average, above average, and even moderately below average water flow years. The reverse is true in significantly below average years. In drought, the Company does not have enough generation to meet domestic Manitoba load and fulfill their obligations under the long-term export sales arrangements without draining reservoirs and risking energy shortages should drought conditions persist longer than anticipated. In order to

minimize the risk during drought years, Hydro must use alternate sources of supply to meet its export sales volumes.



- The wholesale electricity market has undergone deregulation and the majority of energy is now transacted under market-based rates as opposed to cost-based rates that were in place in 1989. However, although electricity transacted at market-based rates has to be "fair and reasonable", the "fair and reasonable" test is so broadly defined that it cannot be relied upon to eliminate the risk of "shortage pricing". As an example, prices at Cinergy in the Midwest have traded above \$5,000 per MWh on several occasions over the past five years. Shortage pricing occurs when electricity sellers do not have sufficient power to sell into the marketplace to meet demand and are therefore able to command significant premiums over the cost of the most inefficient unit in the marketplace.

- Most of Hydro's market activities are with the NERC region known as MAPP. MAPP has a significant amount of hydro, coal, and natural gas fired units. When the region experiences a drought, "shortage pricing" may exist during peak demand periods. The likelihood of shortage pricing conditions in MAPP is exacerbated by the fact that limited transmission availability from other NERC districts into MAPP, and between northern and southern MAPP, constrains the ability to acquire lower-cost electricity from neighbouring regions.
- Manitoba Hydro has gas-fired generation in its mix of generation assets. These units did not exist in the '89 drought but now account for approximately 400 MWs of generation with an above-market heat rate of approximately 12.5. This makes Hydro's units less efficient than the vast majority of generating units in the region. The initial capital investment in these plants was based on the understanding that they would be used for reliability purposes and the trade-off was accepted between unit efficiency and upfront capital costs. As such, the units will only be turned on in emergency situations, drought conditions or when shortage pricing exists in the region where significant premiums are being asked from the marketplace.
- Natural gas prices were (and still are) trading at very high levels relative to historical prices. For much of the period from 1985 to 2002, Canadian natural gas prices traded from \$2.00 to \$3.00 per gigajoule ("GJ"). Since 2002, gas prices have been trading above \$5.00/GJ with occasional short-term spikes above \$9.00. This served

to make it more expensive to run Hydro's gas units and increased the cost to cover export sales commitments given the positive correlation between regional gas and power prices.

It should be noted that while the Company was feeling the financial impact of the drought, at no point was Manitoba load in immediate danger of being curtailed.

The '03 Drought

The '03 drought actually began in the summer of 2002. June 18, 2002 was the last major storm that Manitoba Hydro experienced until March '04. By mid-July '03, the Winnipeg River Basin was at 40% of normal production. Manitoba Hydro did draw some water out of the reservoirs during the winter of 2003. However, it was evident that there was very little snowpack in the winter and the failure of normal spring rains would result in a serious drought and significant losses.

In January '03, the Power Sales and Operations Division had estimated that the potential reduction in net revenue mainly caused by a drought and continued high natural gas prices could reach as much as \$700 million. This figure was discussed with the Company's executive team.

The Manitoba Hydro Board of Directors was apprised of the potential for a drought in January 2003. However, the Corporation's financial exposure was not discussed in detail at that time given the probability of such an extreme deterioration in net revenues was still low. The Board of Directors was advised that there was nothing to indicate that the spring and summer rains

would not be normal and that it was still premature to begin purchasing natural gas or power to hedge Manitoba Hydro's drought exposure.

By the spring of '03, although there were near-normal water conditions in the most westerly water sheds, elsewhere water conditions were extremely poor and overall reservoir levels were at their lowest point in 27 years. By the end of June '03, the Company was witnessing its second lowest water inputs in the 92 years of history on record (worst year on record was 1940/41). It was during the second quarter of '03 that a drought management plan was put in place.

The Drought Management Plan

The premise of the Drought Management Plan was to avoid expenditures as long as possible while at the same time ensuring that the ability to serve Hydro load was not jeopardized through the maintenance of sufficient hydro reserves.

The key points to the plan were:

- Use the river flows to meet the obligations of the Manitoba load;
- Maintain hydro reserves as per the Operations Planning Criteria discussed in the next section. It should be noted that while costs may be incurred during the current period by deferring the use of hydro reserves until a later period, the net cost effect of this decision should include the revenue generated in the future period.

These incremental revenues would not have been earned if the reserves had been consumed during the prior period;

- Gradually respond to drought conditions as necessary on a largely mechanistic basis tied to updated volumetric forecasts;
- When necessary, use the U.S. wholesale market to buy back the Company's export market obligations. Since the Company does not have the ability to transact in the US, the Company would look to enter into bookouts¹ with their export sales customers.
- Delay expenditure commitments as much as possible to allow for the mean-reverting nature of hydrological inflows. History shows that while droughts do occur, their length and severity cannot be determined on an upfront basis. If the Company had booked out transactions immediately and the rains had arrived in late spring or early summer, the Company would have incurred significant opportunity costs in a non-drought environment.
- Develop Operations Planning Criteria for determining the energy surpluses/shortfalls in an extended drought condition.

The Company's executives approved the Drought Management Plan in May '03.

¹ A "Bookout" is a transaction between two counterparties that offsets all or part of a previous transaction that had been entered into between those two counterparties. The physical delivery requirements of the original contract covering the agreed-upon bookout volumes are offset with the bookout transaction. Since the delivery of the product is perfectly offset in the two transactions, there is only a cash payment made from one party to the other party. The cash difference represents the difference between the contract price in the original transaction and the contract price in the bookout transaction.

Operations Planning Criteria

An Operation Planning Criteria was developed in May '03. The model assumptions for planning purposes were:

- A 5% worst-case water supply for the balance of the year;
- An extremely cold winter (10th percentile winter);
- Must be able to survive a drought in '04 given '03 drought conditions. In other words, the Company required sufficient water in storage to last another year assuming lowest historical flows. The requisite hydraulic reserves would be determined on at least a weekly basis recognizing updated snowpack conditions;
- The Company intended to meet all firm Export Sales obligations. This would be done through bookouts or through physical delivery from the gas plants and/or 3rd party purchases.

The Planning model would look at the future on a weekly basis for the first 90 days and monthly thereafter.

Operations Planning Criteria Results

In May '03, the Company ran its Operations Planning Model with the drought management criteria for the first time and the results showed a tremendous shortfall of energy in the fall and winter periods. The amount of the shortfall was up to 1,800 MWs in each hour with a maximum between 700,000 and 800,000 MWhs in each month.

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The Company justifiably believed that the consistent purchase of 1,800 MWs on the spot market would lead to at least two negative consequences:

- Shortage-pricing² in the marketplace; and
- Transmission constraints on the northern tie line.

Given that Manitoba Hydro is usually a seller in the spot market, the shortage-pricing factor would be exacerbated once the market sensed that Manitoba Hydro was a large buyer.

Fears of transmission constraints were brought to bear in the winter of '04 as there were several periods of transmission overload in southern MAPP when Hydro purchased 1000 MWs. The capability to run 400 MWs of gas-fired generation was needed to serve domestic load during these periods transmission system overload. This led to a requirement to plan for natural gas purchases for delivery in the winter of '04.

The results of the Operations Plan led to a plan to acquire natural gas for winter deliveries and to execute a series of complicated bookouts with customers on Hydro's existing export sales.

² Shortage pricing occurs when the marketplace determines that a market participant is in dire need of buying or selling the underlying commodity. In this case, the Company would be short and in dire need of buying large quantities of energy. Sellers would quickly detect the Company's circumstances and begin charging incrementally higher prices for the commodity. Shortage pricing at the Cinergy delivery point (one wheel away from Manitoba Hydro) has reached in excess of \$5,000 on a handful of occasions over the past 5 years.

Bookouts of Export Sales

In 2003, Manitoba Hydro had over 6,100 GWhs of long-term sales³. Under the Operations Planning Criteria, these sales were in danger of not being met if the Company experienced an extended drought. Beginning in late spring '03, the Company embarked on a program to approach all of their customers with long-term sales, looking to enter into agreements with them to bookout as much of the sales as possible from the fall of '03 through the spring of '04.

Manitoba Hydro had a great deal of success in booking out the seasonal non-peak periods of these transactions with the majority of its customers. Bookouts of summer transactions were purposely avoided with the recognition that Hydro's customers relied on the security of the Company's summer supplies. A move to reduce these summer supply commitments in the forward markets could have had long-term negative repercussions on Hydro's reputation for reliable electricity deliveries.

In some cases, due to the internal policies of the Customers, bookouts were not possible. In these cases, the Company worked with suppliers to divert power so that the commitment was offset even though a true bookout did not exist.

By September '03, the majority of the commitments had been eliminated in the market. However, there still existed a gap of approximately 650 MWs of on-peak exposure that needed to be covered.

³ "Long-term sales" are sales that have durations of longer than 1 year.

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It was at this time that Manitoba Hydro and [REDACTED] reached an agreement whereby MH purchased a [REDACTED] MW call option from [REDACTED] with a strike price tied to [REDACTED] actual cost of gas multiplied by a heat rate of 12.5. The contract term was from [REDACTED] '03 to [REDACTED] '04. It would be reasonable to assume that [REDACTED] cost of gas correlates very highly to the Demarcation delivery point on the Northern Natural Gas Transmission Line.

The Company also purchased a [REDACTED] call option from [REDACTED] [REDACTED]. This transaction had a strike price of [REDACTED] per MWh plus [REDACTED] fuel cost adjustment. The contract term was from [REDACTED] [REDACTED]. Even though the plant was in the [REDACTED] owned firm transmission from the plant to [REDACTED] so that the final delivery point was [REDACTED]. The nature of the [REDACTED] fuel cost adjustment meant that the strike price of this option was below prevailing market rates most of the time, resulting in the Company's exercise of the option even in those periods where physical electricity was not required to meet its commitments. The power purchased under this option was then assigned to [REDACTED] for subsequent resale.

One of the hindrances in covering the export sales was the lack of market liquidity at the delivery point underlying these sales contracts. All of the Company's export sales occur at the US/Canada border, largely driven by financial considerations. When the Company is required to offset these positions, it is necessary to take into account the lack of liquidity at the delivery point. Hydro is not authorized to buy and re-sell electricity in the US because it does not have a Power Marketers Authorization ("PMA") from the

Federal Energy Regulatory Commission ("FERC"). With this in mind, the Company entered into these two call options as the best alternative taking into account deliverability and reliability concerns.

These two transactions left the Company with minimal power price exposure over the winter '04 period. The effect of the option transactions served to convert Hydro's exposure from illiquid electricity markets to more liquid natural gas markets through the winter months. Coupled with potential natural gas requirements for the Company's plants in Manitoba, this led to a significant exposure to winter gas prices.

Natural Gas Requirements

Based on the Operations Planning Criteria developed in May '03, the Company determined its winter gas requirements for its plants to be the following:

Table 1

| Month | Required Gas Volumes (Dth) | Required Gas Volumes (Dth) |
|---------|--|---|
| | May 21, 2003 Power Sales & Operations Report | June 11, 2003 Power Sales & Operations Report |
| Nov '03 | 270,000 | 806,000 |
| Dec '03 | 1,030,000 | 2,247,000 |
| Jan '04 | 1,220,000 | 1,896,000 |
| Feb '04 | 1,230,000 | 1,871,000 |
| Mar '04 | 1,230,000 | 1,803,000 |

| | | |
|--------------|-----------|-----------|
| Total Winter | 4,980,000 | 8,623,000 |
|--------------|-----------|-----------|

As can be seen in Table 1, the output of the Operations Planning Model can show significant changes in short periods of time as a result of shifts in forecast hydro availability. (Table 1 references requirements for the Company's own gas-fired generation as the forecasts pre-date Hydro's option arrangements with [REDACTED] and [REDACTED]. It was for this reason that the Company instituted a "just-in-time" hedging policy for its natural gas requirements. The plan was to execute one-sixth of its requirements each month from May to October. This would defer the expenditure as long as possible in an effort to capture any significant change in water flows.

Once the power call options were signed in September with [REDACTED] and [REDACTED] an additional gas exposure was layered on. With only two months until the winter season, those incremental gas risks had to be managed expeditiously. The gas requirements for the power call options were as follows:

Table 2

| Month | Required Gas Volumes (Dth) |
|---------|----------------------------|
| Nov '03 | 1,651,000 |
| Dec '03 | 3,128,000 |
| Jan '04 | 2,919,000 |
| Feb '04 | 2,451,000 |

Sep 18, 2003 Power Sales & Operations Report

| | |
|--------------|------------|
| Mar '04 | 202,000 |
| Total Winter | 10,351,000 |

Natural Gas Hedging Arrangements

In March '02, Manitoba Hydro entered into a Fuel Supply and Fuel Management Services Agreement ("████████ Agreement") with ██████████. This contract allowed Manitoba Hydro access to natural gas expertise on an intermittent basis when required. The ██████████ Agreement provided a cost-effective alternative to the establishment of an internal gas procurement function whose expertise would only be called upon during drought year scenarios.

The ██████████ Agreement covered a range of functions and services:

- Gas supply, including the resale of any excess gas supply;
- Gas Delivery Services to the Centra/TCPL receipt point;
- ██████████
- ██████████
- Pipeline nominations;
- Pipeline and storage balancing;
- ██████████

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- Fuel Management Services [REDACTED]

The [REDACTED] agreement was, in part, an exclusive agreement between the Company and [REDACTED]. This meant that the Company was precluded from acquiring gas supply or other gas services from other market participants for Manitoba Hydro plants. No such exclusivity arrangement was in place related to the Company's U.S. activities.

Once the results of the Operations Planning Model were accepted, the Company realized that it had a large exposure to rising natural gas prices for gas deliveries for the winter '04. The Company initiated conversations with [REDACTED] and discussed alternatives with respect to the management of the gas exposure. Subsequently, Manitoba Hydro embarked on a gas acquisition strategy that would cover the exposure to gas prices and the use of interruptible transport on TCPL.

The first hedging agreement that the Company entered into was in late May '03 and by the end of May, the Company had acquired a total of 1,489,600 Dths of natural gas at AECO for the winter period at a fixed price of US\$5.656/Dth. This covered approximately 30% of the total expected winter requirements. This transaction was a physical purchase of natural gas for deliveries at AECO of 9,800 Dths/day from Nov. 1/03 to Mar. 31/04.

Subsequently but also in May, a decision was made to acquire 1.5 Bcf of natural gas storage at the Union/Dawn facility in Ontario. The storage

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allowed for flexible injections and withdrawals and also allowed for a combination of firm and interruptible withdrawals. If the Company did require gas supply on any given day during the winter, it knew it had several options in getting the gas to the Centra/TCPL delivery point including backhauls or diversions. The storage contract was acquired at a cost of \$1,125,000. The Company also had to purchase gas to inject into storage. This was done during the month of June with injections ranging from 30,000 Dths/day to 75,000 Dths/day.

The volumes of gas injected each day were tied largely to a mechanistic approach based on the required levels of storage gas as per the Natural Gas Requirements report issued on at least a weekly basis by the Operations Planning Department. [REDACTED] injection and deliverability information were also considered in the injection decision-making process. The net result was an average injection price of \$6.102. If the Company had injected ratable volumes each day, at the same price levels, the average cost of gas would have been \$6.127. On 1.5bcf of gas, this represented a savings of \$37,500.

In late June, the decision was made to acquire an additional 2 Bcf of Union/Dawn storage at a cost of \$1.5mm. Once again, the Company needed to acquire the natural gas and they did so from July 1 until September 30. The injections were done much more ratably than the first series of injections and were done under the following schedule:

Table 3

| Dates | Volume (Dths/day) |
|------------|-------------------|
| [REDACTED] | |

| | |
|-----------------|-----------------|
| July 1-July 17 | 32,300 Dths/day |
| July 18-July 31 | 19,000 Dths/day |
| Aug 1-Aug31 | 28,500 Dths/day |
| Sept 1-Sept 30 | 10,490 Dths/day |

As can be seen in the above table, there was some discretion on how much to inject each month. The average price of the 2 Bcf was \$5.189/Dth. If the Company had injected ratable volumes each day, at the same price levels, the average cost of gas would have been \$5.109. On 2.0bcf of gas, this represented an additional cost of \$160,000. It should be noted that the Company did not use discretion in trying to predict gas prices, but used discretion in timing as a result of strategy to delay purchasing gas as long as possible in an effort to take advantage of any rainfall that may occur. Also, it should be noted that the Company did not necessary embark on a strategy to inject the maximum amount of storage, but to inject their forecasted requirements.

The combination of the two storage transactions and the AECO hedge represented a purchase of 5.0 Bcf of gas or roughly 60% of the potential requirements for the upcoming winter season. It was felt that the remaining balance would be left unhedged in order to avoid the costs if the gas supply was not necessary. Given the uncertainty with the supply situation, this was a rational and prudent approach.

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In July '03, the Company was sitting on 5.0 Bcf of fixed price natural gas. While this provided a very good hedge against rising prices in the winter if the Company required the gas, it also opened up the Company to the risk of a downward price movement should the Company not require the gas. The uncertainty of the winter situation led the Company to purchase physical put options to protect against falling prices.

From July to September '03, the Company entered into a series of put options that totaled 2.55 Bcf. The put options had to be exercised at the beginning of the month and the strike prices ranged from US\$5.25 to US\$5.75 per Dth and cost US\$485,500. They were all options that gave Manitoba Hydro the right to put gas to ██████████ at Union/Dawn in exchange for the strike price. Each of the options was for the January to March time period and could be struck at the beginning of each delivery month.

This protected Manitoba Hydro from a fall in gas prices until the beginning of each month. However, it did not protect the Company from a subsequent fall in prices during the delivery month.

Once the Company purchased the two power call options in the US, it was exposed to rising natural gas prices should they require the power. The decision was made to acquire 4.5 Bcf of natural gas storage at three locations in Oklahoma and Kansas. These locations are in close proximity to Northern Natural's Demarcation delivery point. Because it was so late in the injection year, no open storage was available. ██████████ had therefore already injected the natural gas into the storage fields. Therefore the gas was transferred at a price of US\$5.45 to Manitoba Hydro for a gas cost of

US\$24,525,000. In addition the cost of storage asset rights was US\$3,800,000.

Once again, the Company was hedged against rising prices should it require the gas, but was left exposed to falling prices should the gas not be required. The Company purchased a financially settled put option against NYMEX settlement prices for 3.65 Bcf for a cost of US\$1.6mm. This protected the Company against NYMEX prices falling below the \$5.45 price level for the January to March timeframe. Again, these puts were monthly settled options. They protected the Company from falling prices until the beginning of the month, but left the company exposed to movements in the gas price after the first of the month. The Company did look at daily settled options, but they were deemed to be uneconomic.

Unwinding Hedges

The first hedge to be unwound was the initial gas supply hedge with deliveries at AECO. Once the storage was put in place, Manitoba Hydro reviewed the merits of their initial hedge at AECO. There were several issues with this hedge that made it a very inefficient hedge. The issues included:

- The delivery was a fixed volume per day. The likelihood of the Company requiring the gas each day was very small. However, on days that the gas was required, the Company would require up to 80,000 Dths/day. If the Company continued to buy hedges in this fashion, the exposure to falling prices when gas had to be re-sold

would have been greater than the exposure to rising prices in the absence of a hedge.

The delivery location was NIT (Nova Inventory Transfer). [REDACTED] could not guarantee that they could deliver the gas to the Centra/TCPL delivery location. This created a very low risk that on an extremely cold day in the winter, the Company would not receive delivery of the physical gas at its plants.

In July '03, while working with [REDACTED] to continually develop an adequate gas management plan for the winter, the Company decided to sell the previously AECO acquired hedges. The sale of the physical purchase was made at a price of US\$4.615. This represented a loss of \$1.041/Dth for a total loss of approximately \$1.5mm. This loss was taken to avoid future losses if prices fell further and the hedges were not required. Also note that the second tranche of Union/Dawn storage that was acquired by Hydro was viewed as a replacement for the physical purchase hedge. The original physical purchase in effect acted as a hedge of the potential cost of injecting storage from the timing of the initiation of the physical purchase in May to the acquisition of the storage in late June.

As the Company continued through the winter, Operations Planning would update the hydro conditions on at least a weekly basis and forecast gas requirements through the winter. Each storage contract was constrained by having to have 100% of the gas withdrawn by March 31 '04. There were also daily limitations on how much firm and interruptible gas could be withdrawn under each contract. The Power Trading Department would get

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updated numbers from the Operations Planning Department and would analyze the future gas needs weighed against the need to withdraw all the gas by the end of the withdrawal season.

Beginning in January '04, the Power Trading Department began selling off the excess natural gas. They did this first by determining if the put options were in the money⁴. If they were in the money, those options would have been exercised. However, most of the options expired out of the money and as such, the Company ended up selling the excess gas into the daily-spot or month-ahead market.

The majority of the gas was sold in the daily-spot market. This was done at fixed prices for the Union/Dawn storage gas and at the Gas Daily index for the US storage gas. The balance of the gas was sold on a monthly fixed price basis and delivered on a daily withdrawal basis once it was deemed surplus.

Once gas was deemed to be surplus under the Operations Planning Criteria, the Company exercised some degree of discretion when making these sales taking into account conditions in the gas marketplace and [REDACTED] understanding of market developments. The Company did not hold excess gas positions for an extended period of time after being notified of the excess position from the Operations Planning Department.

⁴ The put options would be considered in-the-money if the monthly index price underlying the put contracts settled below the strike price of the puts.

Observations and Recommendations

The following represents the observations and recommendations of RiskAdvisory with respect to the actions that Manitoba Hydro undertook to manage the drought of 2003-2004.

General

We believe that for the most part, Manitoba Hydro managed the drought in a very commendable and prudent manner.

RiskAdvisory has worked with several hydro operators and gas storage operators in the past. It is difficult enough to manage gas storage when you know what your starting point and end point will be. The key to managing that type of storage is optimizing the injection and withdrawal. The problem with the Hydro storage is you don't know the injection schedule or the total amount of energy that you will have when you start the winter season. This results in making estimations that include several large-impact assumptions. The most material assumptions surround the timing and magnitude of precipitation. This cannot be answered with any degree of certainty, but the water flow analysis and planning curves that Manitoba Hydro uses appear to be credible solutions. This is an area that the Company focuses a great deal of effort on enhancing and RiskAdvisory supports a continuation of this effort.

The losses that the Company experienced could have been over \$1 billion⁵ if the exposures had not been managed properly. Alternatively, the Company

⁵ The loss could have reached this level as a result of purchasing a large amount of power on an hourly basis in shortage pricing market conditions coupled with the potential for high natural gas prices.

may have been forced to drain the reservoirs, creating the risk of delivery shortfalls if the drought had continued. While there were costs associated with the hedging activity, the need to avoid material income swings and maintain balance sheet stability more than outweighed those costs.

Given that the majority of employees responsible for implementing the Drought Management Plan had not had previous drought experience, the ingenuity and intelligence that was shown in creating and implementing the Drought Management Plan exceeded expectations.

The "averaging-in" hedging strategy is a sound strategy for the situation that the Company was in. The uncertainty around the water forecasts and the liquidity considerations of the delivery points at which the Company needed to transact are the most valid reasons for this type of hedging activity.

Bookouts

The use of book-outs for the majority of the power hedges was necessary for this drought. However, RiskAdvisory does have concerns with this approach in the future. Based on years of experience in the energy markets, RiskAdvisory believes that any kind of captive transaction leads to less attractive prices. For example, if a customer of Manitoba Hydro usually buys from Manitoba Hydro, and then is asked to sell to Manitoba Hydro at the same delivery location, that customer is apt to think that problems exist and the only reason Manitoba Hydro would be doing this is that the Company is in some kind of trouble. While the Company made its customers aware that it had other options available, the customers would no doubt still apply a premium to the market for the sale.

The reliance on captive bookout transactions could be reduced in the future with the application for a FERC PMA. Transmission considerations tied to the constraint on Manitoba's import capacity will mean that bookouts cannot be eliminated. However, access to a broader network of buyers and sellers associated with the PMA should create opportunities to acquire and re-sell power with more efficiency. Most notably, contracts would not have to be assigned to third parties, thereby reducing incentive payments to these counterparties.

The PMA application does not come without costs and FERC requirements. The Company may opt not to do this for other corporate reasons. Our recommendation is to study the feasibility of receiving market-based rate authority and weigh the portfolio risk management advantages against the perceived disadvantages.

Storage

The use of storage is often misused as a financial risk management tool. That is because the flexibility that storage provides from a physical perspective is not required to manage many companies' financial and operational risk. That is not the case with Manitoba Hydro.

Because of the Company's need for large amounts of gas at sporadic moments in time, a ratable purchase of natural gas would have the hedger either being tremendously short on days when it did need the gas, or tremendously long on days that it did not need the gas. The volumetric flexibility of storage withdrawals gives the Company the desired amount of supply on a daily basis as it is required.

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The Company used a forward purchase of AECO gas as a foothold for a hedge until they could get a proper amount of storage put in place. Again, this is a common way of establishing a hedge at illiquid points.

An alternative to storage as a hedge could be the purchase of call options. The Company analyzed this strategy and it was deemed too expensive relative to the benefits that call options gave them. In fact, by purchasing forward gas, and buying put options, the Company ended up purchasing what are called "synthetic call options". Synthetic options provide the same economic protection as conventional call options. By purchasing the forward, the Company has exposure to falling prices and will benefit in rising prices. When the Company purchases the put option, it will benefit from a fall in prices and simply forfeit the fixed premium if prices rise. The combination of the two structures leaves the Company benefiting from a rise in prices with no downside to falling prices. This is the same economic condition that exists when owning a call option. By using storage as the forward position for the synthetic calls, the Company gained the required delivery flexibility and was protected against upside risk with reduced downside risk.

The problem with the put options that the company acquired was that they expired at the first of the month. Therefore, if the first of the month price was higher than the strike price, the Company would make the choice not to exercise the option. Once this happened, the Company had exposure to falling prices because there was no put option to give protection and there existed downside risk to the storage gas.

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During the '02-'03 time period, a number of gas marketing and trading companies had suspended operations, with a resulting adverse effect on liquidity. Companies were less willing to enter into complex option structures. Market liquidity and the willingness to consider complex transactions have subsequently rebounded. RiskAdvisory believes that Hydro should look at other option strategies as an alternative to storage the next time this occurs.

A very good fit for Hydro would be to purchase daily call options that can be exercised on any day of the winter, but can only be exercised on a limited number of days during the winter (i.e. 40 days out of the 151 winter days). For example, the Company might acquire these options on a volume of 75,000 Dth per day for a total of 3 Bcf of options. Under the monthly settled call option, that 3 Bcf of options would give the Company the ability to call on approximately 20,000 Dth per day. Therefore, the Company would have to buy 3.5 times the amount of options to give it the same protection as the restricted daily call option described above. While the option that gives one the right to select the specific exercise days during the winter is more expensive on a per Dth basis.

RiskAdvisory does not believe this type of option would have been available to Hydro at a commercially reasonable price during the drought year given liquidity conditions in the gas market at the time. This is meant as a recommendation for consideration during the next drought management situation.

Tolling Agreements

RiskAdvisory believes that this was a very innovative hedging mechanism to add additional resources. Essentially, the Company capped the amount of shortage pricing that it would be paying into the market at a [REDACTED] heat rate. Since the market expectation for a heat rate in the MAPP region for that time period was around 7.0, this tolling arrangement was similar to an out-of-the-money call option that could be struck on a daily basis. Hydro was able to cap the amount of shortage pricing premium that it would see in the market at approximately \$30.25 [REDACTED] gas price per MWh. This is far lower than what could have been experienced in the market if the market determined that the Company was experiencing a major drought. From a hedging perspective, the tolling agreements also served to convert the exposure from daily power price movements, which are extremely difficult to hedge to a daily natural gas exposure where more liquidity and portfolio flexibility exist.

Put Option Strategy

There are two concerns with the put option strategy used by Hydro. First, the Company acquired monthly-settled puts and so Hydro did not have any price protection between the time when the monthly index price was set and the day within the month when the gas was sold out of storage. With the puts, Hydro did obtain protection for the period from the date the puts were acquired to the first-of-the-month index point. This was meaningful protection, but it did not provide complete protection given that there was no insulation against a decline in prices during the delivery month. To offset

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some of this risk when surplus gas existed and when the puts were in the money, Manitoba Hydro sold the underlying volume at the put strike price eliminating any forward downside on that volume.

If this strategy is employed again, Hydro must ensure that stakeholders are aware that while the monthly puts do protect against part of a potential price decline, the protection is not complete. Second, the NYMEX options that were entered into were not for physical delivery, but were financially settled. The Company does not have a policy in place that authorizes the use of financial options for hedging the power portfolio. There was a solid rationale behind their purchase, but the Company must put in place policies to govern the use of these types of structures. Transactions should not be executed unless they are permitted by Policy, or the Risk Management Committee grants an exception to the Policy.

[REDACTED]

The [REDACTED] Agreement is meant to give Hydro access to people with gas market experience and expertise. [REDACTED] is a highly regarded firm with qualified people and Hydro does have access to those people. RiskAdvisory would not recommend changing the advisory component of the [REDACTED] Agreement. The contract does contain an exclusivity feature, which Hydro management recognized at the time the contract was signed provided incremental value to [REDACTED]. Given the Company's likely sporadic involvement in gas markets primarily during infrequent drought periods, it was deemed necessary to provide this exclusivity as a further benefit to the natural gas counterparty to ensure that Hydro received superior attention

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and coverage when the gas market services were needed. Despite the rationale for the inclusion of these exclusivity features, RiskAdvisory does have concerns with this aspect of the contract. These concerns center around competitive pricing, idea generation, and credit.

Under terms of the contract, every gas and storage contract, for Manitoba Hydro plants, signed by Hydro has to be with [REDACTED]. Therefore, there is no way of knowing whether Hydro is getting the best possible price in the market. The Company did however check the pricing from [REDACTED] against published indices as a reasonableness test. It is likely that [REDACTED] was able to build in incremental margin on the pricing of its transactions with Hydro because of this captive relationship.

By talking with multiple suppliers, Hydro also has access to a broader suite of market experts with a range of risk management and gas portfolio ideas. RiskAdvisory recommends that Hydro should lever off some of the relationships that Centra Manitoba has developed in the gas marketplace. While it is recognized that Hydro has completely different needs, the Company can benefit from the market intelligence that Centra's relationships provide assuming there are no regulatory impediments for doing so.

The key concern with the [REDACTED] relationship centers around credit. For the most part, Hydro purchases gas from [REDACTED] and there exists very little credit exposure with that type of activity. However, the credit exposure went up dramatically when Hydro purchased storage assets from [REDACTED]. The storage agreements that Hydro entered into are with [REDACTED] not the storage operator. [REDACTED] was the counterparty with the storage operator.

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Hydro would then buy the gas from [REDACTED] and inject it into the storage field. At that point in time, [REDACTED] was legally holding the Company's asset - that asset being the gas. The Storage Operator did not know that it was Hydro's gas. From the Storage Operator's perspective, [REDACTED] was the owner of the gas. Therefore, if [REDACTED] were to run into credit problems, the Storage Operator could take control of the gas and sell it in the open market to pay for [REDACTED] obligations. Hydro's only recourse would be to launch a claim against an un-creditworthy [REDACTED].

Although such an event did not happen, Hydro should be aware that they had a significant exposure to [REDACTED] that should have been backed up by a letter of credit. A better solution yet is to be able to deal with the Storage Operators directly so that Manitoba Hydro retains control and title over the storage gas.

Hydro also incurred significant credit exposure to [REDACTED] with respect to the put transactions. If gas prices had plummeted and [REDACTED] was unable to perform on its contractual obligations to Hydro, the credit loss could have been material. A US\$2.00 fall in NYMEX and Union/Dawn gas prices below the put strike prices combined with a performance failure by [REDACTED] would have resulted in the incurrence of a US\$12.4 million credit loss.

RiskAdvisory believes that Hydro should continue to engage [REDACTED] on the advisory side. However, the [REDACTED] Agreement should be restructured to eliminate the transactional exclusivity. In addition, credit support terms must be negotiated if further transactions are contemplated with [REDACTED].

Management Reporting

One of the key objectives associated with risk management reporting is the reduction of "surprises" that can have a material impact on revenues and income. A concern with the Hydro drought situation was that there appeared to be an element of surprise among the executive team around the magnitude of losses as they unfolded. While the Power Sales and Operations Division did discuss the potential magnitude of losses with senior management, there was more focus placed on the mean expectation of the forecast revenue, as opposed to the distribution around this mean outcome. The Integrated Financial Forecast ("IFF") projected the expected revenue, and management's attention was tied more to this estimate than the information that was provided around the potential for deviations from this estimate.

RiskAdvisory believes that Hydro needs to improve the management reporting to include the mean cases, but also give sensitivities and probabilities around the mean scenario. These reports should be produced on at least a monthly basis, with more frequent reporting in the midst of a drought scenario. This would provide management with a clearer picture of the worst-case scenario, allowing for enhanced contingency planning and reducing the likelihood of negative surprises.

Establishing Limits

Decisions around the timing of portfolio hedge transactions, the size of these hedge positions and the choice of structure were partially based on quantitative analysis and indications of the potential volume underlying the

conditions can have a material impact on Hydro's supply portfolio. Against this backdrop is the corporate strategy supporting long-term export sales. History has shown that by terming up these exports as opposed to selling generation excess on a real-time basis, Hydro is able to earn a significant price premium. Also, by entering into long-term contracts with customers in MAPP, Hydro serves to defer the construction of new competing generation facilities in its export market. The downside is that during a drought, the Company will be exposed to significant losses as it seeks to cover positions and maintain reliability. Past experiences have shown that the annual benefits in most years outweigh the risks during a drought. Hydro staff involved in the drought management activities now has additional experience in these operations and lessons have been learned. This will be a large benefit if another drought hits soon. The Company may not have been perfect in the development and implementation of their drought strategy, but the risk-reducing benefits of the hedging strategy far outweighed the implementation cost of the strategy.

Manitoba Hydro Undertaking #35

**Manitoba Hydro to file the Risk Management Review of Power Sales and Operations -
Risk Advisory report dated April 2003.**

Please see attached report.

PUB/MH/RISK-100

Reference: KPMG Report Section 3.6.2 Model Revision Process

Risk Issue: Model Documentation

- c) Please indicate what, if any, changes in parameters have been made to the HERMES model since the drought in 2003/04.

ANSWER:

Manitoba Hydro has continued to make improvements and expand the capability of the HERMES model to reflect the changes in the operating environment however the basic principles of the model are unaltered since its original inception. One significant change that has been made since the drought of 2003/04 was the market forecast methodology. As explained in PUB/MH/RISK-98, this change was prompted by changes to the MISO market and the later accrual of historic market clearing price data.

The input data history is constantly accruing with the passage of time and that allows for better inference regarding potential future outcomes. For example the historic inflow record of 2003/04 has now become a valuable actual scenario for evaluating potential planning outcomes of similar severity.

PUB/MH/RISK-101

Reference: KPMG Report – Page 122, Section 4.2 Key Findings/ Page 237 Fn 22

Risk Issue: Pricing Methodologies Mark to Model

- b) Please confirm that MH's first methodology employed includes the determination of a price based on averages of price forecast purchased from multiple power price forecasting consultants listed in footnote 22 on page 237 of the KPMG report. If so confirmed, please provide a full listing indicating the vintage of each of the forecast currently employed in the pricing models and an explanation of if or when the price forecasts are refreshed.

ANSWER:

Please see response to PUB/MH I-156(a) for a comment on Manitoba Hydro's long-term electricity export price forecast methodology. An average of the five consultants' forecasts issued in the fall 2007 period through early winter 2008 was used to prepare the electricity export price forecast used for IFF08-1 and IFF09-1.

Updated information was obtained from five external price forecast consultants in the January to March, 2010 period for use in the 2010 power resource plan and the 2010 IFF, which is currently under preparation.

PUB/MH/RISK-101

Reference: KPMG Report – Page 122, Section 4.2 Key Findings/ Page 237 Fn 22

Risk Issue: Pricing Methodologies Mark to Model

- d) Please discuss the merit of incorporating the unit cost of new generation and transmission in support of the new contracts, in establishing the reference price to be negotiated.**

ANSWER:

The merits of incorporating avoided cost analysis in establishing the reference price to be negotiated include:

1. Provides a benchmark of the customers alternative self build option and of prices that may be offered by competing suppliers;
2. Provides a cost benchmark that may be considered by regulators when evaluating the feasibility of Manitoba Hydro's proposal; and
3. Provides a benchmark for evaluating the reasonableness of the price calculation based on Manitoba Hydro's electricity price forecast.

PUB/MH/RISK-101

Reference: KPMG Report – Page 122, Section 4.2 Key Findings/ Page 237 Fn 22

Risk Issue: Pricing Methodologies Mark to Model

- e) **Please provide KPMG’s views of the merits of each of the proposed adjustments to the pricing model suggested by the NYC.**

ANSWER:

KPMG Response:

KPMG developed a conceptual framework to guide it in its external quality review of Manitoba Hydro, as detailed in Section 1.2. In applying this conceptual framework, KPMG carried out a detailed review of the NYC Consultant’s Reports and other documents to group the NYC’s assertions into the Issues and Themes as presented in the KPMG report. In assessing the Issues, we took the approach that our work would not necessarily result in a total concurrence with or rejection of the assertions underlying an Issue; in some instances, we have found that we concur with some elements of an assertion and reject other elements. Accordingly, we would suggest that readers of this report focus on the analysis of the Issues as well as any recommendations that relate to the Issues, rather than focusing on whether we concur with or reject any particular assertion. As documented in Section 4.2 KPMG finds that on the basis of its analysis of Manitoba Hydro’s pricing process, Manitoba Hydro has an appropriate methodology for arriving at its sales price in its long-term contracts. Further, in various sections of chapter 4, we have analyzed related to the NYC’s assertions related to the pricing of long term contracts.

PUB/MH/RISK-101

Reference: KPMG Report – Page 122, Section 4.2 Key Findings/ Page 237 Fn 22

Risk Issue: Pricing Methodologies Mark to Model

- f) **Please confirm whether KPMG reviewed the price forecasts from the five consultants to assess whether the prices utilized in the models are still valid. If not provided, please explain how KPMG satisfied itself that the pricing methodology utilized by MH incorporates relevant market pricing forecasts.**

ANSWER:

KPMG Response:

As explained in Section 4.6.1, Manitoba Hydro's "Pricing of Long-Term Export Contracts" provides that "Long-term electricity price forecasts and market analyses are usually purchased annually..." As such, the key issue is whether or not Manitoba Hydro is using the most recently purchased price forecasts when it is negotiating a particular long-term contract. KPMG understands that Manitoba Hydro was using the relevant purchased price forecasts for the various long-term contracts it was negotiating.

PUB/MH/RISK-101

Reference: KPMG Report – Page 122, Section 4.2 Key Findings/ Page 237 Fn 22

Risk Issue: Pricing Methodologies Mark to Model

- g) Please explain how KPMG satisfied itself that the proposed adjustments to the pricing model suggested by the NYC would not improve the information utilized in negotiating firm contracts.

ANSWER:

KPMG Response:

Please refer to answer (e) above.

NYC/MH Issue # 124.

Source: NYC Long Term Contracts

SubIssue: Risk

Subject: Manitoba Hydro's legal provisions for Liquidated Damages in the structuring of Long Term contracts are not sufficient. While there are some curtailment provisions that address Hydro not being able to serve its Domestic load these provisions are not adequate, and fall far short of required industry standards for Hydro's true exposure and buybacks in MISO.

NYC - MH - [C168S11]

NYC/MH Issue # 33.

Source: NYC Long Term Contracts

SubIssue: Risk

Subject: The sales process is no longer suitable in US market deregulation for ascertaining Hydro's Long Term Contracting requirements pricing and needs. This again is leaving Hydro with an increased short position. The overselling of the book is resulting in Hydro being exposed for twenty five years to a significant US Market Price import exposure to serve the sales of under-priced firm commitments.

NYC - MH - [C652S11]

NYC/MH Issue # 34.

Source: NYC Long Term Contracts

SubIssue: Risk

Subject: Hydro is overselling its available energy and therefore burdened with extraordinary import financial exposure to support the firm commitments in Long Term Contracts. The EPM book is oversold. This applies not just to the existing book until [REDACTED] but also all the way until [REDACTED] with the MH 2., 2. inclusion of new proposed contracts with [REDACTED] MH 1.

NYC - MH - [C62S11]

PUB/MH II-140

Subject: Tab 12: Corporate Risk Management

Reference: Tab 12.4, Financial Risks, Page 7 Future Revenue Requirements

- b) Please provide the same tabular illustration as in (a), but without the WPS and MP contract commitments (e.g., Alternative Scenario with respect to the 2008/09 Power Resource Plan.**

ANSWER:

The same % breakdown as the PCOSS cannot be applied going forward as costs are not functionalized beyond the study year.

Please see the average price table attached for the Alternative Development Sequence filed in Appendix 15.

IFF09 Alternate Sequence Export Revenue Assumptions

| | 2009/10 | 2010/11 | 2011/12 | 2012/13 | 2013/14 | 2014/15 | 2015/16 | 2016/17 | 2017/18 | 2018/19 | 2019/20 |
|--------------------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| (in GWh) | | | | | | | | | | | |
| MH Hydraulic Generation | 33,124 | 30,525 | 30,065 | 30,786 | 30,990 | 30,912 | 30,927 | 31,158 | 30,884 | 30,791 | 30,809 |
| MH Thermal Generation | 152 | 159 | 432 | 437 | 440 | 443 | 496 | 516 | 544 | 573 | 483 |
| Import Energy (including Wind) | 733 | 1,508 | 2,616 | 2,576 | 2,568 | 2,604 | 2,659 | 2,685 | 2,758 | 2,817 | 2,889 |
| Manitoba Domestic Energy Sales | 23,968 | 24,346 | 24,728 | 25,075 | 25,413 | 26,030 | 26,439 | 26,790 | 26,743 | 26,929 | 27,229 |
| Total Export Sales | 9,149 | 7,122 | 7,842 | 8,158 | 8,036 | 7,468 | 7,216 | 7,166 | 7,061 | 6,866 | 6,548 |
| (in Millions of Dollars) | | | | | | | | | | | |
| MH Hydraulic Generation | \$ 111 | \$ 102 | \$ 100 | \$ 103 | \$ 104 | \$ 103 | \$ 103 | \$ 104 | \$ 103 | \$ 103 | \$ 103 |
| MH Thermal Generation | 8 | 8 | 41 | 41 | 44 | 45 | 54 | 59 | 65 | 70 | 68 |
| Import Energy (including Wind) | 36 | 56 | 171 | 172 | 177 | 184 | 195 | 203 | 213 | 221 | 233 |
| Total Manitoba Domestic Energy Sales | 1,160 | 1,193 | 1,246 | 1,305 | 1,365 | 1,441 | 1,510 | 1,582 | 1,653 | 1,725 | 1,805 |
| Total Export Sales | 332 | 292 | 517 | 546 | 576 | 552 | 655 | 661 | 671 | 673 | 660 |
| Average Price (\$/MWh) | | | | | | | | | | | |
| MH Hydraulic Generation | \$ 3.36 | \$ 3.35 | \$ 3.34 | \$ 3.34 | \$ 3.34 | \$ 3.34 | \$ 3.34 | \$ 3.34 | \$ 3.34 | \$ 3.34 | \$ 3.34 |
| MH Thermal Generation | 52.79 | 52.09 | 95.96 | 94.73 | 99.73 | 102.49 | 109.81 | 115.07 | 118.63 | 122.54 | 140.21 |
| Import Energy (including Wind) | 49.69 | 37.12 | 65.29 | 66.79 | 69.09 | 70.57 | 73.38 | 75.67 | 77.19 | 78.60 | 80.82 |
| Total Manitoba Domestic Energy Sales | 48.40 | 48.99 | 50.39 | 52.03 | 53.69 | 55.36 | 57.13 | 59.05 | 61.80 | 64.07 | 66.30 |
| Total Export Sales | 36.24 | 41.02 | 65.90 | 66.88 | 71.71 | 73.92 | 90.81 | 92.19 | 95.06 | 98.02 | 100.84 |

IFF09 Alternate Sequence Export Revenue Assumptions

| | 2020/21 | 2021/22 | 2022/23 | 2023/24 | 2024/25 | 2025/26 | 2026/27 | 2027/28 | 2028/29 | 2029/30 |
|--------------------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| (in GWh) | | | | | | | | | | |
| MH Hydraulic Generation | 30,852 | 33,296 | 36,834 | 37,528 | 37,614 | 37,688 | 37,709 | 37,744 | 37,788 | |
| MH Thermal Generation | 542 | 487 | 398 | 387 | 305 | 305 | 306 | 307 | 308 | |
| Import Energy (including Wind) | 2,902 | 2,597 | 2,289 | 2,326 | 2,165 | 2,164 | 2,196 | 2,220 | 2,254 | |
| Manitoba Domestic Energy Sales | 27,551 | 27,893 | 28,363 | 28,638 | 28,979 | 29,379 | 29,795 | 30,215 | 30,600 | 31,016 |
| Total Export Sales | 6,347 | 7,903 | 10,484 | 10,943 | 10,550 | 10,003 | 9,691 | 9,359 | 9,066 | 8,761 |
| (in Millions of Dollars) | | | | | | | | | | |
| MH Hydraulic Generation | \$ 103 | \$ 111 | \$ 123 | \$ 126 | \$ 125 | \$ 126 | \$ 126 | \$ 126 | \$ 126 | \$ 126 |
| MH Thermal Generation | 79 | 72 | 60 | 61 | 63 | 52 | 54 | 56 | 58 | 61 |
| Import Energy (including Wind) | 241 | 221 | 201 | 209 | 215 | 193 | 170 | 191 | 204 | 212 |
| Total Manitoba Domestic Energy Sales | 1,805 | 1,805 | 1,805 | 1,805 | 1,805 | 1,805 | 1,805 | 1,805 | 1,805 | 1,805 |
| Total Export Sales | 655 | 850 | 1,115 | 1,205 | 1,199 | 1,166 | 1,169 | 1,168 | 1,170 | 1,168 |
| Average Price (\$/MWh) | | | | | | | | | | |
| MH Hydraulic Generation | \$ 3.34 | \$ 3.34 | \$ 3.34 | \$ 3.34 | \$ 3.34 | \$ 3.34 | \$ 3.34 | \$ 3.34 | \$ 3.34 | \$ 3.34 |
| MH Thermal Generation | 145.00 | 147.66 | 151.91 | 158.63 | 163.82 | 170.52 | 176.38 | 182.80 | 189.59 | 197.88 |
| Import Energy (including Wind) | 83.03 | 85.00 | 87.73 | 89.91 | 91.60 | 88.96 | 78.58 | 86.93 | 92.04 | 93.89 |
| Total Manitoba Domestic Energy Sales | 65.52 | 64.72 | 63.65 | 63.04 | 62.29 | 61.45 | 60.59 | 59.75 | 58.99 | 58.20 |
| Total Export Sales | 103.27 | 107.60 | 106.35 | 110.15 | 113.63 | 116.60 | 120.66 | 124.81 | 129.00 | 133.31 |

PUB/MH/RISK-107

Reference: KPMG Report - Section 5.2/ NYC Issue # 183

Risk Issue: Independence of Middle Office Function

KPMG states “ The consultant asserts that it is imperative to segregate the duties involved in calculating and reporting the risk and financial exposure of MH from the business unit responsible for operating level decisions, trading and opportunistic deals”

New York consultant states that “ it is contrary to all best practices, to have PSO Staff issue the “variance” report, since that would place them in a conflict of interest in reporting on their own system errors and system mistakes. Up until now because of the lack of independence on variance reporting no objective Risk Management reports have been issued which would serve as a second set of eyes to alert Hydro to avoidable Front Office internal errors and operational control standards which should be followed.”

- a) Please address directly the NYC’s assertion, and provide KPMG’s views, on its merits.**

ANSWER:

KPMG Response:

KPMG developed a conceptual framework to guide it in its external quality review of Manitoba Hydro, as detailed in Section 1.2. In applying this conceptual framework, KPMG carried out a detailed review of the NYC Consultant’s Reports and other documents to group the NYC’s assertions into the Issues and Themes as presented in the KPMG report. In assessing the Issues, we took the approach that our work would not necessarily result in a total concurrence with or rejection of the assertions underlying an Issue; in some instances, we have found that we concur with some elements of an assertion and reject other elements. Accordingly, we would suggest that readers of this report focus on the analysis of the Issues as well as any recommendations that relate to the Issues, rather than focusing on whether we concur with or reject any particular assertion.

PUB/MH/RISK-107

Reference: KPMG Report - Section 5.2/ NYC Issue # 183

Risk Issue: Independence of Middle Office Function

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- b) From a of from a leading best practice standpoint should an “independent Middle Office” remain “physically within” PS&O.**

ANSWER:

KPMG Response:

From a leading practice standpoint, to the extent warranted by the organization’s activities, the process of monitoring and controlling risk should be managed independently of individuals conducting the commercial activities. KPMG is not aware of any leading practice to ensure there is “physical separation” of the Middle Office from the commercial operations. In fact, KPMG’s observation would be that many market participants maintain a close physical proximity between the two groups.

PUB/MH/RISK-107

Reference: KPMG Report - Section 5.2/ NYC Issue # 183

Risk Issue: Independence of Middle Office Function

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- c) Please explain what is meant by KPMG when it states “While not ideal from an independence perspective, there are operational efficiencies associated with this approach.” Please reconcile with the contradictory finding in section 5.9 that states the Export Power Middle Office is a single, independent, risk management function.**

ANSWER:

KPMG Response:

From a functional reporting perspective, the Export Power Middle Office reports to the manager of Corporate Risk Management who in turn reports to the Chief Financial Officer. Thus, it is independent from the Power Sales and Operations Division. This finding is stated in both Section 5.2 and Section 5.9 and as such there is no contradictory finding. The KPMG report reference to “operational efficiencies” relates to some utility industry participants, including MH, that have certain market risk assessment responsibilities embedded within their power trading business unit. Consequently KPMG comments are distinguished between functional reporting (independence) and responsibilities (operational efficiencies).

PUB/MH/RISK-108

Reference: KPMG Report - Page 200, Section 5.4.1.7

Risk Issue: Power Sales and Operations Market Committee Terms of Reference

- d) Please provide the history of the Risk Management Function since its inception, and detail the personnel performing risk management functions over the years.**

ANSWER:

History of the Risk Management function as it relates to Power Sales and Operations Market Committee is as follows:

- The Export Power Middle Office was created in February, 2007.
- The Corporate Risk Management Department Manager was assigned responsibility for managing the middle office function. The Corporate Risk Management Department Manager reports directly to the Senior Vice-President, Finance & Administration and Chief Financial Officer.
- A Senior Risk Management Officer was hired in February, 2008 to perform responsibilities in the middle office.
- A Senior Market Risk Analyst was hired in July, 2010 to assist in further strengthening the middle office function.
- A Credit Analyst position has been established and will be staffed in November 2010.
- A risk software solution is being studied with a decision on a selected option expected early in 2011.

NYC/MH Issue # 14.

Source: NYC Long Term Contracts

SubIssue: Risk

Subject: In accordance with industry standard risk management best practices, MTM protocols need to be adopted to correctly identify financial Market Risk Exposure to Manitoba Hydro. RM independent assessment shows that the magnitude of MTM losses currently incurred in the Export Power Marketing Division is of magnitude -\$74MM for Fiscal Year 0708.

NYC - MH - [4]

NYC/MH Issue # 15.

Source: NYC Long Term Contracts

SubIssue: Risk

Subject: Current IFF Forecasts do not expose the huge MTM losses and earnings depletion for Rate-Payers incurred in the EPM sale of export contracts and leave Hydro obscured from its Market Risk exposures. As market prices increase, or in a "green world" type scenario where, fuel prices may increase exponentially, Hydro's MTM exposure on these contracts can increase dramatically, leaving Hydro's stake in export markets vulnerable.

NYC - MH [A3S11]

NYC/MH Issue # 134.

Source: NYC Long Term Contracts

SubIssue: Risk

Subject: Even retroactively in FY0607, when prices were lower, the MTM (Mark-To-Market) and Economic value of the exposure of under-priced Long Term contracts was over \$100million dollars annually compared to R/T prices in MISO. This is a significant portion of risk to the company.

NYC - MH - [C4S11].

NYC/MH Issue # 135.

Source: NYC Long Term Contracts

SubIssue: Risk

Subject: The MTM exposure risks inherent in the contract structure could be avoided if a current and adequate pricing method (concurrent with modern market pricing) were used in the Front Office

NYC - MH - [C7S11]

NYC/MH Issue # 138.

Source: NYC Long Term Contracts

SubIssue: Risk

Subject: The Economic Value Loss and Risk Capital associated with the new contracts, under Market Price deregulation exceeds today -\$3.4BN (negative). This amount should be fairly represented on IFF and Rate Projections to reflect true impact to financial projections.

NYC - MH - [C56S11]

NYC/MH Issue # 151.

Source: NYC Long Term Contracts

SubIssue: Risk

Subject: Even without looking at the new generation on the existing generation system, the MTM Losses in Export Power Marketing could amount to several hundred million dollars a year, and under viable stress tests, close to \$1Billion dollars over a 5 year basis. This would deplete all viable risk capital available to Manitoba Hydro, and it is for this reason, that RM's responsible recommendation is the immediate ceasing of EPM sale of long term contracts until market risk capital adequacy is attained.

NYC - MH - 7 [A7]